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WISCONSIN DEPARTMENT OF AGRICULTURE

BULLETIN NO. 52

**Issued by the
Wisconsin Department of
Agriculture**

**C. P. NORGORD
Commissioner**

**JOHN D. JONES, Jr.
Successor, June, 1923**

Madison, Wisconsin December 31, 1922

Entered as 2nd-class matter, January 28, 1915, at the post office at Madison, Wisconsin, under the act of June 6, 1900

BIENNIAL REPORT

OF THE

Wisconsin State Department of Agriculture

FOR THE YEARS 1921 AND 1922

JAN 16 1924

**Copies Upon Application
Address State Capitol**

LETTER OF TRANSMITTAL

To His Excellency, JOHN J. BLAINE,

Governor of Wisconsin.

SIR: In accordance with section 1458—1 of the Statutes, I herewith present the fourth biennial report of the Wisconsin Department of Agriculture.

In transmitting this report, permit me to commend to you, and express my appreciation of the sincere and earnest efforts of the boards, officers and employes of the various divisions constituting the department.

Respectfully submitted,

C. P. NORGORD,
Commissioner.

WISCONSIN DEPARTMENT OF AGRICULTURE

STATE CAPITOL, MADISON, WISCONSIN

COMMISSIONER OF AGRICULTURE, C. P. NORGORD.

DIVISIONS:

Agricultural Statistics—PAUL O. NYHUS, Statistician, representing state and federal departments of agriculture.

Insect and Plant Disease Control—S. B. FRACKER, State Entomologist; ERNEST CHAMBERS, Field Entomologist; H. J. NINMAN, Plant Pathologist; W. A. WALKER, in Charge of Barberry Eradication; C. D. ADAMS, Chief Apiary Inspector.

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Horse Breeding—A. S. ALEXANDER, Director.

Live Stock Sanitation—DR. O. H. ELIASON, Director and State Veterinarian; DRS. J. T. PURCELL and J. S. HEALY, representing the State and U. S. Departments of Agriculture, cooperating on Hog Cholera and Accredited Herds, respectively.

Immigration—B. G. PACKER, Director; G. M. HOUSEHOLDER, Assistant Director.

State Fair—O. E. REMEY, Secretary; A. W. KALBUS, Accountant.

Seed and Weed Control—A. L. STONE, Director; HENRY LUNZ, D. R. MIHILLS, Field Inspectors; GEORGE MORRIS, Seed Analyst.

Accounting and Publications—E. C. SEVERSON, Accountant and Editor.

Dog Licensing—A. B. ALEXANDER, Director.

Veterinary Examiners—DR. T. H. FERGUSON, Secretary.

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BIENNIAL REPORT
OF THE
STATE DEPARTMENT OF AGRICULTURE

C. P. NORGORD, *Commissioner of Agriculture*

Part I

The farmers of Wisconsin and of the United States experienced some of the most radical changes in economic conditions during the past biennium that have been felt during the entire war and post-war period. The year 1919 saw farmers at the height of their prosperity and receiving high prices for everything they sold, paying high prices for everything that they purchased, and buying on a scale characteristic of people with large incomes.

The year 1921 showed the opposite extreme—low prices for farm products, in many cases lower than before the war, only slightly lowered prices for the articles that they purchased, and an income that could not possibly be stretched to meet their obligations.

Marked Economic Changes During the Biennium

The same farmers that experienced the thrills of prosperity in 1919, found new hope and encouragement in 1922. A gradual increase in the prices of farm products, a decrease in the price of articles which farmers purchased, and an increase in the relative buying power brought new faith in agriculture as an industry.

The depression of 1921 is attributed to many different causes, but in the final analysis, the fundamental cause was the deflation following the boom of war times. If the deflation had occurred with equality so that no injustices had resulted, there, no doubt, would have been less clamor and less dissatisfaction with the economic conditions of the year 1921. Economic adjustments, however, are impersonal and have no respect for persons or classes. Injustices and inequalities still exist, but they are slowly being ironed out.

Wisconsin farmers received the lowest gross income in the economic depression following the war during the year 1921. In that year the total income from crops and from live stock, and live stock products sold, totaled $317,000,000. This was a drop of 34 per cent from the 1920 income and 43 per cent less than the income of 1919.

When we realize that 80 per cent of the farmer's income is derived from the sale of live stock products, we must conclude that the price of live stock products and of live stock determines whether Wisconsin's farmers are successful or unsuccessful. Cheese dropped from 29½c in May, 1919, to the low point of 14c in May, 1921. Fourteen-cent cheese had been an unheard of thing in Wisconsin since October, 1915, so that dairymen had little basis for encouragement at that time. Summer and fall prices of cheese, however, advanced so that cheese prices for 1921 averaged 18½c. This price was 5c a pound above the yearly price paid in 1914. The drop in dairy prices caused the milk checks of the farmers of the state to be 26 per cent less in 1921 than they were in 1920, and 36 per cent less than in 1919.

Farmers were quick to experience the difficulty and to express it in the common remark: "If the articles which we buy were down in price, it wouldn't be so bad to have these low prices for our products." In this remark farmers commented on the point that is vital to them—not prices, but actual purchasing power.

Improvement Takes Place in 1922

During 1922, particularly during the latter part of the year, a change for the better was very noticeable. Farm prices gradually rose so that at the close of the year dairymen, in particular, were greatly encouraged.

Both prices and production of farm crops were generally better in 1922 than in 1921, with the result that the total crop value in Wisconsin for the year 1922 was 20 per cent greater than in 1921. The 1922 crop value stands at $228,000,000, against $189,000,000 for 1921, and $329,000,000 for 1920. An exception to the general increase in value, obtained for farm crops in 1922, was the value of Wisconsin's potato crop. This was only 66 per cent of the 1921 crop and it had a depressing effect in the potato sections of the state.

Cheese prices on the Plymouth Board did not reach as low figures in May and June of 1922 as occurred in 1921. Prices rose constantly, reaching a new high market in December of 26½c. All dairy products reflected the increase in cheese prices. The price of hogs for the year 1922 was 6 per cent greater than the price in 1921. With dairy, hog and crop prices higher in the last part of 1922, the farmer's faith in the dairy business and in Wisconsin's agriculture was renewed.

Wisconsin Farmers Most Fortunate

The prices of dairy products, in which Wisconsin leads the nation, suffered smaller reduction in prices than did the prices of other live stock products and crops.

Wisconsin's farmers have been so much better off than the farmers in many other states, that agricultural leaders in other states have pointed to and written about Wisconsin as the state that went through the depression with the least hardship of any state in the union.

Adjustments Must Continue to Take Place

While times apparently are better—and promise to grow better—the farmer has a long way to go before he reaches the condition of prosperity which his investment and labor expended necessitates. The prices of the articles which the farmers must buy are still high in comparison with what he is receiving for his products, and the future, no doubt, must bring either an increase in the prices of farm products, or a decrease in the prices of articles which farmers buy. In one or the other, or both of these ways, the purchasing power of the farmer must be brought into an equitable balance with that of labor and of industry, before there can be permanent prosperity.

CROP AND LIVE STOCK PRODUCTION DURING THE BIENNIUM

The crop reporting service operating through all the assessors of the state, and through from 1,500 to 2,000 voluntary reporters located in every township, sends out monthly forecasts of production of crops and live stock and an annual report of total production. This provides farmers and cooperative associations and dealers in farm products accurate information regarding the supply, which furnishes a basis for determining what prices should be charged and paid in justice to producer and consumer alike. It furnishes a check upon speculation in farm products.

As an unbiased agency, it alone can be relied upon without question to faithfully collect and impartially distribute such information as desired by the public. The report of no private agency can command the unquestioned confidence of the public. Moreover, the existence of a periodic governmental report prevents the circulation of false statements which might otherwise be issued to deceive the public.

Cooperation With Federal Government

Since May, 1917, the Wisconsin State Department of Agriculture has cooperated with the United States Department of Agriculture in crop reporting work. A considerable saving in funds has been effected and the report strengthened by the utilization of the combined facilities of the two departments.

Monthly Reports Printed

On July 1, 1921, the division began the publication in printed form of a Monthly Crop and Live Stock Reporter. At present approximately 4,500 copies are distributed to interested persons, not only in Wisconsin, but in other states as well. This publication, appearing about the 20th of each month, carries the information made available to the newspapers on the 11th, and in addition a tabulation of county data.

Annual Crop and Live Stock Review

Two annual reviews of crop and live stock production were published during the biennium. The first contained state and county figures on acreage, yield, production, farm prices and farm value of all principal crops for 1920 with comparisons to previous years. In addition, county live stock population and value, and much additional material was presented. The second contained similar information for 1921.

Production Low in 1921; High in 1922

In 1921, only one major crop, corn, exceeded the 1920 production. From the standpoint of total production, the year was much below average. The tame hay crop was greatly reduced by frost damage in May; the production of small grains and potatoes, by dry weather and hot winds in July and August; while corn withstood the dry weather and benefited greatly from an unusually warm fall.

In 1922 practically every Wisconsin crop produced an above average yield. After a late spring, during which planting was greatly delayed, May was warm and produced a quick start, while ample rains and high temperature in June advanced all crops rapidly. Hay crops made a particularly heavy growth. A cool July retarded corn but provided ideal conditions for filling and maturing of small grains. Higher temperatures during August and September insured filling and maturing of corn, and an unusually late potato harvest.

1922 Corn Crop Largest on Record

The 1921 corn crop went down in the history of Wisconsin's agriculture as the largest corn crop on record; 1922, however, added 900,000 bushels to the record of 1921, setting a new production figure of 98,300,000 bushels for the state. The greater production was brought about by an increase of 100,000 acres in the corn acreage of the state. The yield per acre was 44.5 bushels in 1922 compared with 46.2 bushels in 1921.

Yield of Small Grains Were High in 1922

The favorable season for late small grains in 1922 is shown in yield per acre of oats and barley. Oats yielded 41.2 bushels per acre in 1922, an increase of 16.9 bushels above the 1921 yield of 24.3 bushels. The yield of barley per acre increased from 22.5 bushels in 1921 to 32.1 bushels in 1922. The total production of oats in 1922 was 102 million bushels compared to 64 million bushels in 1921, so that dairymen of the state started winter feeding with a large reserve of oats.

Hay Crop Was Short in 1921; Was Large in 1922

In 1922 production of clover and timothy hay was 15 per cent greater than in 1921, caused by both a larger acreage and a greater yield per acre. A severe ice and sleet storm in February killed out a large acreage of alfalfa in the southern counties. The acreage cut for hay has constantly increased in the state, but with this severe winterkilling the acreage cut for hay in 1922 was 92,000 as compared with 131,000 in 1921.

Résumé of Crop and Live Stock Production

The gross income of Wisconsin farmers in 1921 was placed at 317 million dollars. A preliminary estimate of the gross income for 1922 is 350 million dollars. Although this is an increase of 10 per cent over 1921, it represents only 73 per cent, 64 per cent, 72 per cent and 84 per cent of gross incomes for the years 1920, 1919, 1918 and 1917, respectively. While figures are not available for 1912-14, it is probable that the farm income in 1921 was as small or even smaller than in those years.

The total value of Wisconsin crops for 1921 was approximately 189 million dollars and for 1922 the preliminary estimate is 228 million dollars. The crop area for the state increased one-third of one per cent in 1921 over 1920, and 2 per cent in 1922 over the year 1921.

CROP PRODUCTION
(,000 omitted)

Crop	1922	1921	1920	5-year Average 1917-1921	Unit
Corn	98,300	97,405	89,224	66,083	Bushels
Oats	101,558	63,943	107,924	67,583	Bushels
Wheat	3,006	2,802	5,165	8,524	Bushels
Barley	4,200	10,647	15,939	16,985	Bushels
Rye	7,139	5,046	6,184	6,711	Bushels
Potatoes	40,672	21,339	33,261	31,378	Bushels
Clover and Timothy	5,201	3,407	4,757	4,205	Tons
Alfalfa	220	343	286	224	Tons
Tobacco	45,600	61,406	62,583	58,982	Pounds

The value—$259,000,000—of the 1921 live stock and live stock products, was 120 million dollars less than that of 1920. This decrease was due to the decrease in the price of milk and meat products. With somewhat higher and more stable prices in 1922 the value was slightly increased—a preliminary estimate places that value at 264 million dollars.

Dairy Heifers Increase in Number

Dairy cows and heifers (over one year) numbered 2,195,000, as compared to 2,177,000 in 1921, and 2,180,000 in 1920. Mature cows numbered 1,759,000, as compared to 1,777,000 in 1921 and 1,795,000 in 1920. Farm value of cows and heifers is estimated at $114,000,000, as compared with $142,000,000 in 1921 and $211,000,000 in 1920.

Other cattle which includes beef cattle and dairy cattle and bulls, are estimated to number 885,000, valued at $17,000,000, as compared to 883,000, valued at $23,000,000 in 1921.

Swine numbered 1,659,000, compared to 1,676,000 in 1921, and 1,596,000 in 1920. Brood sows, however, increased 6 per cent during the year. Total farm value was $17,000,000 in 1922, $24,000,000 in 1921, and $38,000,000 in 1920. Following a temporary expansion during the war period, the decline in the sheep industry has continued the trend begun in 1908. Sheep and lambs on farms on January 1, 1922, numbered 367,000, compared to 432,000 in 1921 and 480,000 in 1920. Total value was $1,688 000, compared to $2,765,000 in 1921 and $5,280,000 in 1920. Horses and mules on January 1, 1922, numbered 656,000, compared to 663,000 in 1921, and 683,000 in 1920. Total farm value was $61,000,000, compared with $71,000,000 in 1921, and $78,000,000 in 1920.

Generally speaking, Wisconsin's farm production is directed toward marketing in the form of live stock products. In 1921 live stock contributed 81.7 per cent of the total gross income. (By total gross income is meant the gross value of final products, whether actually sold or used on the farm.) As previously mentioned the value of live stock products declined over $120,000,000, as compared with 1920, and $156,000,000 in comparison with 1919. Decreased value was due not only to the decline in prices, but also to smaller quantity production of nearly all live stock products. Sheep, swine and poultry as meat were increased in quantity, while all other products were produced in smaller amounts than in 1920.

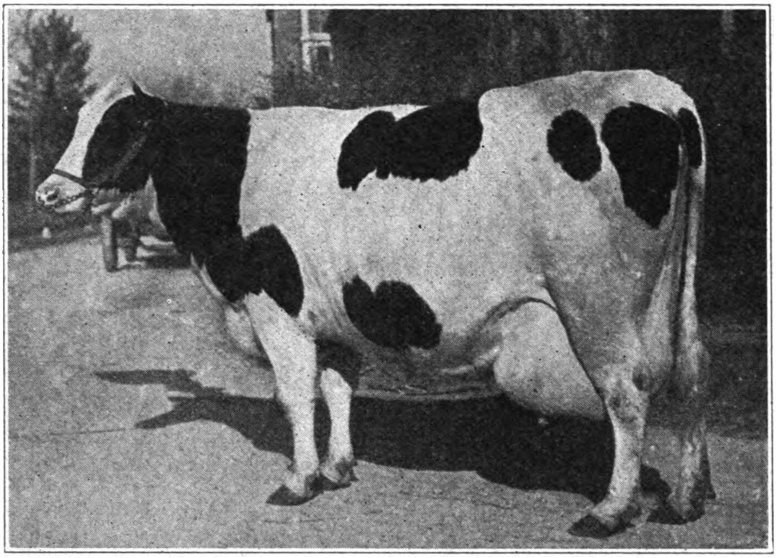
Farm value of milk produced represents 55.8 per cent of the total live stock production, as compared to 61.3 per cent in 1920, and 60.5 per cent in 1919. Producing cows in 1921 were estimated at 1,802,290, as compared to 1,820,990 in 1920, and 1,801,548 in 1919. Due largely to unusually scanty pastures of late summer, production in 1922 declined over 100 pounds per cow. Value of meat production in 1921 was $91,658 000, compared to $112,108,000 in 1920, and $131,215,000 in 1919. Cattle sold for slaughter or slaughtered on farms in 1922 number 474,000; calves 796,000; sheep and lambs 407,000, and swine 2,099,000.

Egg production was estimated at 74,975,000 dozen, as compared to 75,565,000 in 1920; the wool clip at 2,818,000 pounds, compared to 3,219,000 pounds; honey production at 4,728,000 pounds, as compared to 5,281,000 pounds.

Assessors were again asked to enumerate the number and breeds of pure-bred cattle on farms. Total males shown were 42,345, as compared to 37,810 in 1920; females 97,347, as against 85,365 in 1920.

LIVE STOCK SANITARY WORK

The state of Wisconsin contains 3,300,000 head of cattle in 187,483 herds. During the past seven years 871,899 head of these cattle were tested, as compared with 400,000 of the entire previous history of the state. During the past year 10,681 herds. containing 287,300 head of cattle were tested, and the remarkable number of 7,386 herds containing 192,036 head of cattle, were found clean and free from tuberculosis. The average per cent of tuberculosis among the accredited herds in the state was 3.2, and 1.1 per cent among the area tested herds. The county showing the lowest percentage of tuberculosis was Barron with 67,000 head of cattle and .6 per cent tuberculosis. This is without doubt the smallest percentage of tuberculosis for any county, containing so large a number of cattle, in the nation.



One of Wisconsin's $10,000 high record cows. The tuberculin test, however, showed the animal to be tuberculous, and its value automatically dropped to slaughterhouse prices. The purchase of high producing and expensive pure bred and grade animals is too big a speculation without the aid of the tuberculin test.

Fourteen Counties Tuberculin Tested

The most outstanding work of the year is the completion of the tuberculin testing of all cattle in fourteen counties under the area test. The clean counties now are: Douglas, Bayfield, Ashland, Iron, Vilas, Oneida, Lincoln, Price, Sawyer, Washburn, Barron, Rusk, Chippewa and Eau Claire. These fourteen counties contain over 15,000 square miles of contiguous tested territory; 24,000 clean herds, and 315,000 head of cattle. Since July 1, 1921, 16,000 herds containing approximately 200,000 head of these cattle have been tested.

This project was originated in this department, and the first testing made under it in the United States was in Waukesha County in 1917. Since then it has been adopted by the United States Department of Agriculture as the leading and most promising method of tuberculosis eradication.

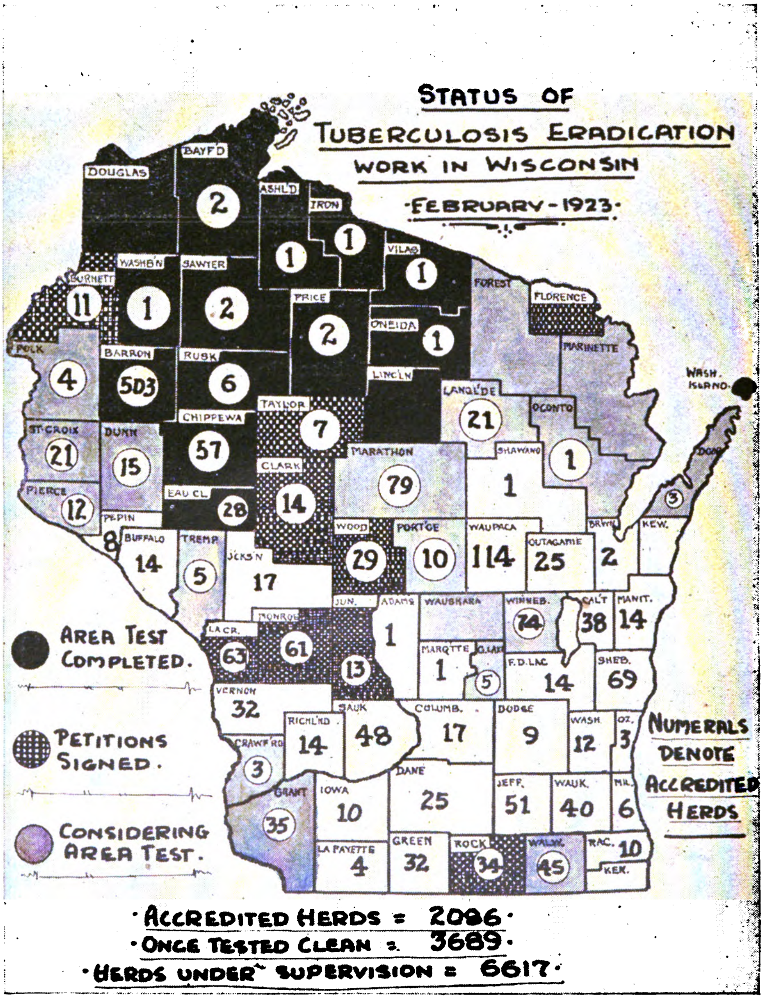
The United States Department of Agriculture cooperates in part in the operation of this project and pays one-half of the indemnity.

Cost Per Head 25c in Older Sections

The cost per head for testing will not exceed 25c in the more thickly settled areas. Much of the region tested has been new settlement with herds containing from one to four animals. In such sections the cost has ranged to 30c, and in one county to 50c per head. Indications are, however, that in the older sections of the state the cost of testing by this method will not exceed 25c, and may drop to 20c.

Testing New Region Saves Money

The percentage of tuberculosis in this northern region ranges from .6 per cent to 3 per cent. These counties average approximately 15,000 head of cattle per county. Within ten years they will probably approach the cattle population of Barron County—67,000. Much of this increase will come from shipment of cattle from the southern counties where tuberculosis now averages approximately 6 per cent. The tuberculosis in these fourteen counties ten years from now would, as a consequence. approach 4 or 5 per cent instead of approximately 1 per cent. If the testing had been delayed until that time, we would,



therefore, probably have paid for indemnity approximately $1,000,000.00 instead of $134,960.00—the actual cost. Not counting an increased operating cost, due to the larger number of cattle, the state has, therefore, saved approximately $865,040.00 by testing this region at the present time.

Protecting the Territory for the Future

Regulations prohibiting the admission of untested cattle into any area tested region are strictly enforced upon the railroad and as much as possible upon others. Bulletin No. 37, setting forth these regulations, is placed in the hands of each owner. The instructions to the railroads are sent to the agents direct from the headquarters' office and are strictly enforced by the agents.

Tested Herds Remain Clean

The efficiency and permanency of this work is emphasized by the results obtained in the accredited herd work as shown by the percentage of reactors disclosed on the first, second, third and fourth consecutive tests in Walworth, Waupaca, and Barron counties given in the following table:

County	First Test	Second Test	Third Test	Fourth Test
Walworth	18.9	4.5	1.9	1.8
Waupaca	2.8	2.5	1.27	1.58
Barron	1.3	.8	.89	.79

In 1915 the percentage of tuberculosis in the state was shown by the records to be approximately 2.5 in the northern section, 3.8 to 4.6 per cent in the central section, 6.6 to 8.6 per cent in the southern section. As against these the average of 3.2 per cent for the 1,987 accredited herds and the range of from .6 per cent to 3 per cent in the northern area tested counties makes a favorable showing.

Protecting the Future

A definite policy of retesting and financing the same at intervals of three or more years will be necessary in order to prevent the growth of incipient infections. This policy may involve participation in payment of costs by the individual counties. Any county funds thus appropriated should be made available through the state legislature for use of the Department of Agriculture in the county from which raised.

There are, however, good reasons for having the entire payment come from the state. The latter would probably bring about more efficiency and uniformity. The actual cost of retesting at intervals of a few years will not be large as compared with the present cost of paying indemnity.

Accredited Herds Lead the Nation

The department started a state accredited tuberculin testing herd plan in 1915. Today in cooperation with the federal government this work leads the nation with 2,086 state-federal accredited herds, 3,689 with one clean test, and 6,617 under supervision. During the biennium there were tested under this plan 9,196 herds, containing 216,899 head of cattle of which 7,901 were reactors.

While the greater emphasis has been put on the area test in the northern section of the state, the accredited herd work has been pushed forward most in the southern two-thirds, though Barron County of the northern section still leads the state with over 500 accredited herds.

Testing Advertises Cattle

These two constructive policies (the area test and the accredited herd work), together with pasteurization of by-products of creameries and cheese factories, have raised Wisconsin's reputation for clean cattle from one of the two or three lowest in 1915, to the leading state in the union, to which all states are looking for clean cattle. Barron County, for instance, from a sale of approximately two carloads of cattle per year before the test, sold thirty-five carloads during the first nine months after the area test. Similar results are being secured in other parts of the state. As a consequence of the work, the state is being combed for cattle and farmers are getting high prices. During the past year of depressed conditions among farmers, 34,051 head of cattle were shipped to other states, as compared with 21,400, the average number of cattle per year for the previous seven years.

State Ready for Testing

The successful development by the department of these constructive policies has created a tremendous sentiment among the farmers in the state for tuberculosis eradication. Nearly all the counties in the northern part of the state are ready for the area test and from 700 to 1,000 herds are constantly on the waiting list for the accredited herd work. With necessary funds available the projects now under way will clean up tuberculosis in the state within the next five or ten years.

Indemnity Funds Insufficient

The shortage of indemnity funds has been a source of delay and irritation to farmers in both the area test and accredited herd work; and specially to farmers paying for their own tests to local veterinarians. Each year durig the past three years it has been necessary to send notices to local veterinarians and farmers checking and stoping the work. The testing has been carried forward at normal speed only during one-third of each of these three years. In order to meet the demands of the farmers for the entire year it will be ncessary to provide approximately three times the amount of indemnity funds now available.

Delay in testing and clearing up the state means an increased number of reactors and larger costs. The sooner we can carry forth work throughout the entire state the smaller the cost will be. The following figures give an estimate of the indemnity cost for the entire state:

Number of cattle in Wisconsin	3,000,000
Number tested to date	500,000
Number to be tested	2,500,000
Estimated per cent of reactors	4½%
Total number of reactors	112,500
Indemnity per reactor, estimate	$40
Total indemnity cost for remainder of the state	$4,500,000

Pasteurization in Creameries and Cheese Factories

The enforcement of the law providing for the pasteurizing of incoming or outgoing products of creameries and cheese factories has been impeded by an imperfection in the wording of the law. This should be remedied and steps taken to complete the enforcement of this law throughout the state. Unless this is done there is great danger that serious discriminations will take place in the price of hogs coming to the packing plants from Wisconsin. Barnyards covered with manure through which cattle wade and afterward lick themselves, and where hogs have access to the droppings of tubercular cattle are even more serious infectors of hogs and cattle than the by-products of creameries and cheese factories, but the latter of the two, especially the cheese factories, are, nevertheless, very serious infective agencies. A thorough pasteurization of by-products collected in the factories and passed out from them will have a very beneficial effect in checking infection. Of course, pasteurization of the primary and incoming products is the better way of accomplishing the desired results because it benefits the human race indirectly. The testing of all the cattle furnishing milk to the factories is an alternative which is also accepted.

Testing Cattle for Sale

Too many herds on which suspicion regarding the presence of tuberculosis has fallen, and too many herds, where unsuspected tuberculosis is present to a greater or less degree, are annually sold at public auction without tests. In this way, for instance, twenty tubercular animals in one herd may be distributed to twenty clean herds and centers through which each of these herds become infected. The compulsory testing of herds sold at auction has been before the legislature for a number of years. It is time that action was taken requiring this, as the public has had reasonable warning and is ready to demand it.

Premium Paid for Hogs in Tested Areas

Chicago and Milwaukee packers pay a bonus of 10c per hundred for hogs coming from accredited counties, having 0.5 per cent or less of tuberculosis as shown by an entire county test. This premium is offered by the packers as a business proposition. According to data compiled by the government inspectors of the Milwaukee yards, from 20 to 30 per cent of the hogs received are retained for tuberculosis. The per cent condemned amounts to 10c per hundred and more of all hogs received. This means that on an average the farmers lose 10c per hundred on hog sales. The packers, knowing from experience that a certain number will be condemned, regulate their prices accordingly and consequently the producer takes the loss.

At the rate of 10c per hundred premium the farmers of Wisconsin would receive annualy over a half million dollars more for their hogs.

Control of Hog Cholera Outbreaks

During the past eight years and in the biennium just passed outbreaks of hog cholera, with their tremendous losses to farmers, have been reduced to a minimum by the campaigns of the department in cooperation with the federal government on vaccination and control of spread by sanitary and regulatory measures enforced upon the farmers and veterinarians. During the past biennium 967 herds have been treated. The following outline of activities is submitted.

Farm visits on call	678
Voluntary visits	1,245
Autopsies	510

The outbreaks in bad years previous to this work frequently caused losses of approximately 10,000 hogs annually, valued at more than $100,000. The work as carried forward has placed Wisconsin, which is seventh in total production of hogs, down to seventeen in losses from hog cholera.

Foot and Mouth Disease Eradicated

The foot and mouth disease which ravaged the United States during the winter of 1914-15, reaching 22 states, and 12 counties in Wisconsin, was successfully entirely eradicated by the State Veterinarian and Live Stock Sanitary Board in this state in cooperation with the federal government. This work was brought to a close during the spring and summer of 1915 as this department was established. The epidemic cost the state 1,349 head of cattle, 1,764 head of sheep and 1,561 head of hogs. The complete eradication of this disease within nine months following its appearance was an accomplishment hitherto unknown in the world. It marks the acme of achievement in veterinary science and practice.

Incompetent Veterinarians Not Licensed

Through their annual examinations of applicants for licenses and the prosecution of quacks, malpractice and illegal practice throughout the state, the veterinary examiners of the department have aided in raising the standard of veterinarians. A great dairy state like Wisconsin, having so large an amount of valuable pure bred stock, needs high-class graduate veterinarians available to protect the health of the stock in every community. This board has done much to find a place where the trade will support good veterinarians, and to secure a veterinarian worthy of the trade, prepared to protect the live stock of all such communities.

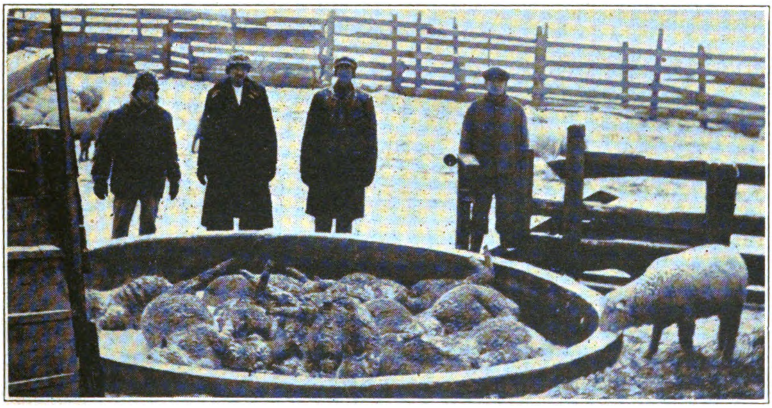
In 1921 there were 607 regularly licensed veterinarians in the state; and in 1922, 509.

Pure Bred Stallions Increased

In the fifteen years, during which the stallion registration work has been conducted, the percentage of pure breds has been raised from 35 to 76.6, while the scrub has been almost driven out. Although the gas engine has wrought havoc with the total number of horses in the state, these figures indicate that the quality and type has been improved and the pure bred horse brought to the front in a remarkable way.

There has been a tremendous check in horse breeding. Since 1909 the number of horses on Wisconsin farms has decreased 9 per cent, while our cultivated area has increased 15 per cent; swine 25 per cent, and dairy cattle 47 per cent.

In 1920 in many districts where each farm formerly produced an average of two colts per year, the same farms were producing only one colt for every six farms per year. This condition cannot go on. Horses on the farms are aging, and few young horses are being produced to take their places. The new demand for horses will soon come and find only a meager supply to fill it. Already, this situation is being felt. Iowa, Missouri, the Dakotas, Nebraska and Kansas, which formerly supplied a large percentage of heavy horses, have but a meager supply now. While future activities in horse breeding cannot be predicted, nevertheless, conditions point to a more encouraging outlook.



The Wisconsin Dog Law made it possible for W. F. Renk, Sun Prairie, Wisconsin, to collect damages for these 21 sheep killed by dogs in January, 1923. As the owner of the dogs was unknown, Mr. Renk would have had no recourse had it not been for the indemnity provisions of the dog law.

Farmers' Losses from Dogs Indemnified

The enactment of the Dog and Stock Law and its enforcement through the Department of Agriculture and town and county officials, has greatly decreased the number of worthless and homeless dogs and the dangers from the same. All damages or losses to live stock caused by the ravages of dogs have been provided for through this law.

The change to payment of the license to town, city and village treasurers at the same time taxes are paid, and the lowering of the license fee to $1.00 and $2.00 for males and females respectively, has satisfied practically every one, so that few complaints or objections are heard. The general opinion of the law is that it fills a large need and brings justice to all.

As a consequence of a study of the machinery needed to effectively enforce the dog law in other states, a representative of the department visited each county to advise and encourage county officials in the enforcement of the law. Experience has abundantly shown that the law would not have been enforced without this precaution, but with this supervision it has been well enforced throughout the entire state.

The requirements that claims be investigated and consequently considered by both town and county officials has precluded the payment of spurious and unworthy claims. The amount of losses to farmers is indicated by the indemnities paid in the various counties, examples of which are submitted for the year 1920:

Grant	$3,736.20
Dodge	3,060.38
Lafayette	1,317.79
Chippewa	1,303.77
Waukesha	1,249.43
Pierce	1,164.01
Richland	1,610.80
Barron	1,191.10

The total income from dog licenses throughout the state for 1920-21 was $467,000; of this amount $44,450 was used for claims and operation, and $422,550 was returned to the towns, villages and cities for their general use.

For 1921-22, under the reduced license fees, the estimated receipts are $155,000; estimated total cost of claims and operation $47,815; prospective balance returnable from state and counties to town, village and city general funds, $107,185.00.

IMMIGRATION AND SETTLEMENT AID

Getting in touch with prospective settlers, giving them official information about Wisconsin soils and pointing out the problems to be encountered in developing farms is the function of the immigration division. This branch of the state government conducts its work to help prevent costly mistakes on the part of those who contemplate bringing families to Wisconsin to establish farm homes. This is accomplished by classified notices in papers, a voluminous personal correspondence, publications, follow-up letters, interviews, lectures, exhibits, personal visits to and progress reports from settlers recently located. The division cooperates with the officials of other states and of the United States.

The following from the director's report is suggestive of its work:

"During 1921-22, 2,369 settlers located in the state, most of whom, coming from territory covered by Chicago and Twin City newspapers receiving information from this division; 15,777 homeseekers asked advice, of whom from 8 to 11 per cent report purchasing as follow-up is completed; and in these two years the Immigration Division has been compelled in almost every mail to caution intending settlers against land proposals where the man, family, pocketbook and the chances failed to fit.

"How to use his limited capital wisely in developing; market for wood products; new land crops for dairying; methods of opening farms, location, comparative fertility and problems of types of soil, the difference in length of growing season, school and road matters, are important subjects now being discussed by the Immigration Division with upwards of 16,000 inquirers responding to classified notices offering official service to homeseekers."

Policy of the Division

Those in charge of the work are conducting it on the principle that the state cannot afford to withhold facts from would-be developers, that it is not the number who locate but the number who stick that count in building a greater state. They know why settlers win and some of the reasons why they do not. Answers to point blank questions from intending settlers are frank and as complete as all the obtainable information can possibly make them. Perplexing situations arise, of course, in pursuing this practice, especially concerning soils, and on those occasions the interests of the homeseeker and his family are alone considered. The plain truth of the matter in this connection is that Wisconsin has on the market a considerable amount of mighty poor land for farming, but upon which it levies taxes with owners constantly trying to get out from under. No inquirers are placed in contact with landowners or dealers.

Financial Aid to Settlers

During this biennium more than half a million dollars ($547,420) in purchase or equipment loans to settlers was made possible by the department cooperating under the terms of the recent land mortgage association act. An amount hard to say but probably more has been saved intending settlers whose attention was centered on some "trade-your-city-flat-for-a-mortgaged - sand - farm-and-live-easy-the-rest-of-your-life" proposition. The department aims also to keep in touch with the settler after he is on the land to obtain and perhaps give suggestions mutually helpful. Individual reports of progress have been received from 2,016 families, telling of work accomplished, future plans and problems commonly encountered in development.

Provisions of the land mortgage association makes it possible for the new settler to remain at work on his own land as he is enabled to capitalize his clearing as it progresses.

How Results Are Obtained

Classified notices are placed in the principal papers of the central west. Through keys to the ads. results of each have been traced for a number of years. This is an effective method of reaching people interested in Wisconsin. Similar conclusions regarding the efficacy of this method have been reached in Canada and other places where tried.

Conferences at Points Where Advertisements Are Centered

Such ads. have been concentrated around special points including Chicago, Minneapolis, and in various cities in Iowa, Illinois and Indiana, and have been followed up by personal visits and conferences, notices of which have been placed in the respective local papers. Such notices placed in papers carrying ads. of private concerns in Chicago bring the intending settler who is in contact with dealers to the office of the Wisconsin representative for unprejudiced information regarding the land he is considering, methods of opening it up, and specific information regarding the state and its opportunities.

These conferences are important in honestly setting forth the advantages of the state, and in protecting future settlers from being imposed upon. This service is being used most extensively in Chicago and Minneapolis. Approximately three months annually is spent in Chicago by the director, and from 70 to 120 interviews are held weekly.

Exhibits at Fairs and Expositions

Another effective method of informing the public consists of exhibits of Wisconsin products at fairs and expositions. The Canadian government for years has followed this system and wherever it has been possible to do so, the immigration division has chosen to set up its display in close proximity to the exhibits from Canada. During the past biennium Wisconsin exhibits were put up at fourteen fairs in Illinois, Iowa, Wisconsin and Indiana.

Letters and Bulletins from Cooperative State Agencies

The immigration division is a general clearing house of information for homeseekers, so another method consists of letters going out from this office under the signature of various state agricultural agencies; The Crop Reporting Service, College of Agriculture, Horticultural Society, Board of Health, Live Stock Breeders' Association and a number of others. All of these set forth conditions in the state from the standpoint of the respective field of work in which each one is operating. This cooperation has been valuable in getting correct information to prospective settlers and it also establishes a point of contact with various service organizations through which aid can be secured by them upon entering the state.

Work With Real Estate Licensing Board

The director of the immigration division is required by statute to serve also as secretary of the board licensing real estate brokers and salesmen. The burden of the work is performed by the board members and its assistant secretary; the director of immigration cooperating in examining applications, signing the licenses, keeping the board informed of complaints against brokers coming to his attention through correspondence and contact with settlers and homeseekers, and referring these complaints to the board for attention.

Visiting, Contact With, and Aid to Settlers

The division of immigration has also made a special point of visiting settlers and learning from personal investigation the progress they are making and the problems before them. It invites progress reports.

The settlers with whom the division is in contact use it for advice on many subjects confronting them in their new surroundings. This has involved correspondence with more than 2,000 and is open to inspection. They, like hundreds of other settlers, are getting out logs for lumber, clearing away the rubbish, draining wet spots, helping build roads, cutting cordwood and bolts, and as their means permit them to do so, are steadily adding to the wealth of the state in their work of establishing themselves on the land.

The pioneer made America. Land clearing is the country's oldest industry. The 16,000 inquiries being followed up by the Immigration Division make it plain that they are looking for something that will provide (1) constant employment, (2) a wholesome living, and (3) a happy home.

Opinions of Investigators

During the biennium an investigation was made of immigration work in all the states by the Country Gentleman, a national weekly. In this investigation the work of the immigration division of this department was highly commended; in fact it was set up before the states of the Union as an example to follow. Since then other states, Michigan and Montana, have investigated our work and are copying.

The following from the Country Gentleman regarding the work is the opinion of an impartial investigator, Mr. P. S. Lovejoy:

"Whenever land development and settlement affairs are being discussed some one is almost certain to mention Wisconsin methods. That state, somehow, seems to have done more intelligent thinking on these subjects than any other, and years ago began to devise better methods than anybody else was using. And it has certainly paid Wisconsin.

"Wisconsin has a fair soil survey of the cut-over areas. This is not merely the regulation, orthodox, scientific, long-name affair, but simple and plain enough to be understood by any one who can read a newspaper.

"To get into touch with as many prospective settlers as possible, the state advertises extensively and right in the same columns with the landboomers and land sharks, urging that newcomers connect up with the state immigration headquarters in Madison before they do anything else.

"Once that is done there isn't any excuse for the newcomer's getting fooled into buying land which will make him sorry, for, in addition to the maps and competent advice from the immigration officials, he has the protection of a state real estate broker's licensing law—a law with teeth in it and fighting men behind it and state courts behind them; courts which over and over again have proven Wisconsin's intention that the settler shall get a square deal.

"The director of immigration gets many thousands of inquiries each year as a result of his advertising and exhibits, but he does not make up a list of the names and addresses of inquirers and peddle it around, a dollar a year as one state recently was doing. Neither does he let people with land come in and paw through those letters, picking out likely looking prospects or broadcast those names and addresses through a free market bulletin, as other states are doing.

"Wisconsin doesn't guarantee everybody a fine farm. It doesn't make a lot of glowing but vague promises. No, it is perfectly possible for a settler to get stuck with hopeless sand or swamp in Wisconsin as in all other states.

"But Wisconsin has certainly done more to prevent anything like that from happening than has any other state, and has been doing it for many years. It has paid, too, tremendously. Seeing that, other states have begun to copy."

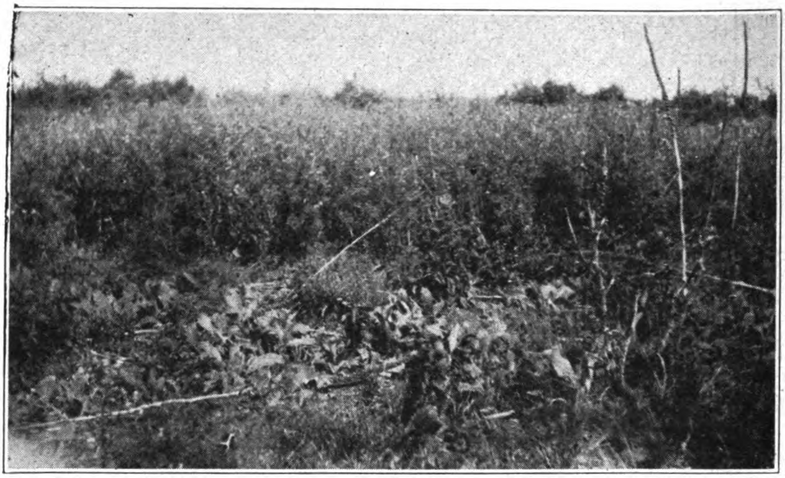
WEED CONTROL OF VITAL IMPORTANCE

Through the enforcement of weed control laws by county and local officials and the development of sentiment in favor of weed eradication, the department has well under way a project which in its way means more in a saving of labor in crop production, yields per acre and the increased value of farm lands than even the eradication of tuberculosis among cattle.

Investigation by the experiment station shows that loss in crop production through weeds frequently amounts to $35,000,000 annually. A dockage of grain alone in 1917 on the leading grain markets amounted to $30,000,000. The estimated annual cost of eradication per farm amounted to $38.00. The value per acre of farms is frequently depreciated by 25 per cent to 50 per cent by the presence of noxious weeds. They constitute a real menace to agriculture. The east-central portion of the state is already so filled with quack grass and other objectionable weeds that it seems almost impossible to eradicate them.

Western Half Take Warning

The western two-thirds of the state is still in a position where reasonable effort will eliminate the noxious weeds. The condition of the eastern part of the state gives warning that unless vigorous action is taken the entire state will be in an equally deplorable condition.



Acres of Canada thistles on a big marsh already gone to seed. The area is too large to cut. What will happen to adjoining property?

Clean Townships Demonstrate Possibility of Eradication

That it is possible to practically prevent weeds from going to seed and spreading throughout an entire township has been demonstrated in quite a number of communities in the state. These demonstrations are found only where the town chairmen and weed commissioners are men of high ideals, who enforce the weed law with wisdom, justice and vigor. They demonstrate the practical value and possibilities of the law and methods of work under way.

Defects of the Law Should Be Remedied

Aside from demonstrating the practical value of the law some defects worth correcting have been discovered. Some of these are:

First—Friendship and neighborhood relationships between the weed commissioners and their constituents. In some instances these can be corrected by selecting commissioners from distant neighborhoods, but more frequently in the type of man chosen.

Second—Lack of earnestness and vigor in the work, and supervision by the town chairman.

Third—Too small pay for weed commissioners and sometimes lack of pay to town chairman for supervision.

Fourth—Lack of district supervisors to push the work as directed by the department.

The law has been in operation long enough so that these defects should be remedied soon.

County Board and Farmers' Meetings

Addresses by members of the department before county school conventions and meetings of officials at farmers' institutes have been held during the biennium. These have been the means of working up enthusiasm through information and inspiration of speakers enthusiastic for the work. They have given information concerning the law, instructions on work, and established a public sentiment in support of weed eradication programs carried on by chairmen and weed commissioners. No law can be effectively enforced unless public sentiment of this kind is developed.

Weed Cutting Charged to Taxes Effective

Wherever delinquents have been dealt with, the weeds cut and the cost charged to the property in the form of taxes, or where fines were imposed, a better respect for the law was established and weeds were cut on time the following year, not only on those farms but on the farms of neighbors who heard of the action taken.

Cut Weeds on Idle Lands

Cutting weeds on idle lands has constituted a difficult problem, but sentiment in all communities seems strongly in favor of demanding the same enforcement of the law on these as other lands, and not permitting them to be the breeding places of weed seeds to be scattered to neighboring farms.

Value of Seed Inspection

The great object of seed inspection is to prevent weed infestation of farms by the use of crop seeds containing noxious weed seeds. This is accomplished to a very large extent as shown by the results. During the two years of the biennium farmers and dealers were prevented from selling lots of seeds consisting of many bushels in some cases. In a majority of cases these seeds were cleaned ready for the market; in spite of this fact there were 86 lots condemned for buckhorn, 69 for Canada thistle, 55 for wild oats, 32 for quack grass, 27 for field dodder, 17 for wild mustard, 13 for corn cockle, 8 for oxeye daisy and 6 for Indian mustard. Had all these infested lots of seed been sown, it would have been impossible to measure the cost of eradicating the noxious weeds thus introduced.

Checks Seedsmen's Guarantees

The law requires that seedsmen shall guarantee the germination, purity, trueness to label, variety and place of growth of seeds. Such guarantees are checked by the department. Farmers can protect themselves by reading the labels when they make purchases. So often they fail to do this and are imposed upon through their own negligence.

Garden Seeds Effectively Protected

Garden seeds must conform to standards of germination established each spring by the department. An example of the great value of seed inspection work was shown in the fact that one company alone in Milwaukee was prevented from selling a carload of garden seed germinating less than 50 per cent, and proportionate amounts in Racine, Kenosha and other cities in the state. Had this dead seed been sown, it would have caused a loss to much needed and valuable gardens, especially to a large number of poor people and others in these cities.

During the past seven years the department has tested 28,766 samples of seeds and condemned 793. During the biennium inspectors collected 1,071 lots of seed from 799 dealers in 286 places. Farmers and dealers voluntarily sent in samples, and a total of 8,668 samples were analyzed during the six months selling seasons of these two years. Of these, 286 lots were condemned.

FEED AND FERTILIZER INSPECTION A PROTECTION

Greater efficiency in feed inspection work has been made possible through the amendment of the feed law by the last legislature. This amendment provided that the cost of the license should be in proportion to the amount of feed sold.

Feed inspection work increased 30 per cent, and fertilizer inspection 100 per cent over the previous year. In addition twenty analyses of insecticides and 38 analyses of soil bacteria were made with a corresponding increase in field, clerical and laboratory work.

The following summary shows that the examinations made during the past year have increased 46 per cent over those of the previous year. Since each fertilizer analysis involves much more work than a feed analysis, the actual work done is even greater than the above named amount would indicate:

Analyses of Samples Showing Increase

	1920-21	1921-22	Increase
Feeds	620	793	173
Fertilizers	61	136	75
Limes	21	39	18
Soil bacteria	..	38	38
Insecticides	..	20	20
Total	702	1,026	324

Per cent increase 46.

Soil Bacteria Tests Helpful

Control work on soil bacteria has proven effective in checking the sale of dead and worthless products for which all well meaning agents and consumers were paying large sums.

The inspection of lime has also provided farmers with a means of intelligently purchasing lime with reference to the actual neutralizing value, the amount of moisture and other worthless material contained. These factors, including fineness, cost per ton and freight charges were studied and reported to farmers in detail.

Wheat Feeds Standards Adopted

Perhaps the most important single piece of work ever done by this division was the study of wheat mill feeds resulting in the establishment of standards of composition for bran, middlings, red dog and others. This study showed that mill feeds had been buried in composition by mixtures to suit the changing prices of different ingredients. As a consequence dealers were able to increase their profits and farmers received good or bad quality according to the changes. Previous to the adoption of these standards by this department, Wisconsin farmers were frequently defrauded out of $100,000 in a single year.

Firms selling feeds, fertilizers and limes must guarantee the composition of their products. The department checks the guarantees and farmers can read labels on every sack and protect themselves as they choose.

Value of Inspection

Had the condemned lots of feeds, fertilizers and seeds been sold to farmers, it would have added tremendously to our weed problem and caused great losses to feeders and crop growers. The value of this type of work is not measured alone by the number of samples analyzed or lots taken off the market, but more especially by the genuine respect for the law which is developed on the markets and seed selling centers of Wisconsin which prevents dealers from shipping into the state or offering upon markets, products that do not conform to the standard required by this law. As a consequence of this work Wisconsin is known throughout the United States for the high standards demanded and secured upon its markets.

INSECTS AND PLANT DISEASES SOURCE OF SERIOUS LOSS

As larger areas of farm land are cultivated and commerce increases, the number of insects and plant diseases attacking our crops becomes greater. The problems of insect control have developed tremendously and costs of the same have enormously increased during the past generation because of the introduced pests; and now farming, truck farming and fruit raising cannot be undertaken without controlling insects and plant diseases. The loss from insects alone is estimated by the United States Department of Agriculture to be $10.00 per capita for every man, woman and child in the United States. In Wisconsin alone this means an annual loss of approximately $25,000,000 to field and truck crops.

Tobacco Wildfire Checked

The most serious new outbreak of this nature in Wisconsin during the past two years was that of tobacco wildfire appearing on ninety farms in Dane county in June, 1922. This disease, first appearing in

North Carolina five years ago, caused losses amounting to several million dollars the first year, and spread to nine states. Its eradication from Wisconsin would mean a saving of great value to the tobacco industry. While completely effective control measures had not been worked out previous to its discovery in Wisconsin, an immediate campaign to exterminate it was at once undertaken and an eradication plan formulated including work during the summer, fall and next spring. This covered such measures as destroying infected plants, leaves and beds; disinfection of materials, tools, etc., and change of location of beds and fields. The work thus far gives fair promise of control. A detailed description of the disease and the methods used for control will be found in a bulletin by Johnson and Fracker, now available for distribution.

Grain Rust Control

According to the United States records, grain rust causes an annual loss to the state of from $800,000 to $5,000,000. The loss in the great wheat-producing sections in the west is, of course, much larger, but consumers and producers of grains alike are affected by the loss and financially benefited by its control. The barberry plant is the only means by which rust can grow to the stage necessary for it to start in the spring. Experience in European countries, as well as here, demonstrate this. Since 1918 the department has located 3,302,124 barberries and has destroyed over 3,000,000 in the state. In Wisconsin the problem is complicated by a number of barberries far in excess of other states and the large proportion of them growing wild in the woods. Twenty-six counties in the southern and western parts of the state have been surveyed and the barberries located and destroyed. Successful demonstrations on the killing of barberries by common salt, sodium arsenite, and other chemicals have been carried on. These promise great aid in the complete destruction of the plants. All cities were practically cleaned up the first two years of the campaign.

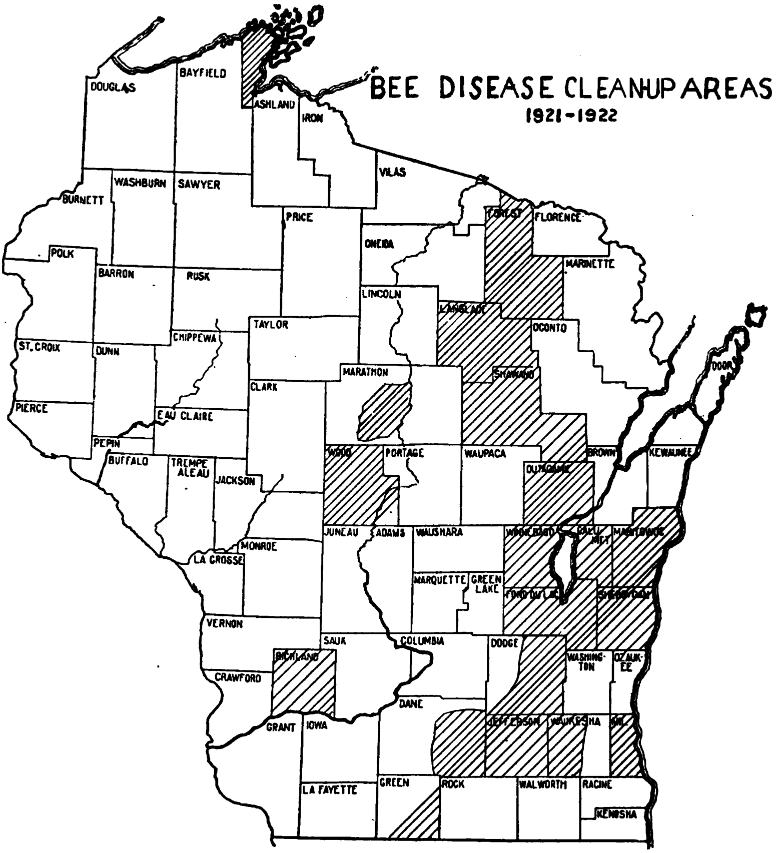
Aside from approximately $1,500 per year, the cost of this work has been borne by the federal government. The federal share has amounted to approximately $10,000 a year up to the past year. Last year the federal government raised its allotment to $30,000 for Wisconsin. In order to carry its share of the burden, and indeed to secure the necessary funds for the work, the state should appropriate at least $15,000 annually for this work. With such a fund the work could be completed in approximately four years. At the rate of work carried on up to the present year, from fifteen to eighteen years would be required.

White Pine Blister Rust

Control of the white pine blister rust appearing on the white pines in the northwestern sections of the state has kept up with the natural spread. This disease threatened eventually to exterminate white pines in Wisconsin, which furnish an annual income of approximately

$230,000. It also threatened the $93,000,000 white pine industry of the lake states. Woods are permanently protected by removal of the currant and gooseberry bushes among and close to the trees. Nearly thirty thousand acres have been covered in this campaign and a number of infected forests have been logged. Since 1919 this work has been conducted on a basis of cooperation with owners of pine woodlots in the infected areas. Such cooperation has been very successful and satisfactory.

Valuable pine stands have been protected in this manner near Deer Park, Grantsburg, Reserve, Chippewa Falls, Eau Claire and Durand. The department, in cooperation with the Conservation Commission and its wardens, has carried forward an effective campaign to prevent the spread of this disease by pines carried in greatly increasing numbers by tourists coming from the infected regions. Colored posters quoting important parts of the state nursery inspection law also deterred tourists from digging trees. Several wardens reported an average of twenty cars each intercepted daily during August and September for carrying of trees.



BEE DISEASE CLEANUP AREAS
1921-1922

Bee Disease Reduced

The department has successfully applied the area method of eradication to American and European foul brood in apiaries. Four counties have been entirely cleaned up, and twelve others are under way. This, together with the successful enforcement of regulations restricting the movement of infected materials, has set free the wonderful opportunities for honey production in Wisconsin, and put the bee industry on its feet. The Wisconsin method is now being adopted by many other states in the Union. In spite of the widespread disease conditions met with in 1915, at present scarcely more than 2% of the colonies examined show foul brood in the clean-up counties. In each area disease is reduced at about 50% per year.

Grasshopper Outbreaks Controlled

In cooperation with the town boards making appropriations for the purchase of spraying materials, the department has accomplished a large and useful work for the northeastern counties in the control of unprecedented outbreaks of grasshoppers. Over 10,000 bushels of poisoned bran mash were distributed, protecting crops on approximately 20,000 acres.

Cranberry Insect Survey

At the pressing request of the cranberry growers' association, work was taken up in 1922 to aid the cranberry growers in the control of insect infestations. The work resulted in the checking of a number of insects which threatened serious damage, the most important being the black-headed fireworm. Measures were adopted on all but one cranberry bog, resulting in saving several thousand barrels of cranberries. The bog which was not treated was almost a complete failure. As Wisconsin produces one-seventh of the nation's cranberries, these measures had a material effect on the total production of the country.

Potato Leaf Hopper Control

In connection with the control work of the department in 1919, it was discovered that the potato leaf hopper caused practically all the difficulties in potatoes which formerly were attributed to sun scald and leaf burn. In 1922 a method of spray control was worked out in cooperation with the experiment station and the United States Department of Agriculture and cooperative demonstrations of the method of spraying necessary to control this insect were carried out in the northern part of the state. Each of these spray plots resulted in an increase in the yield over the unsprayed ones adjoining, amounting to from twenty-five to one hundred bushels per acre, depending upon the variety and the degree of infestation.

San Jose Scale Control

Nearly every fruit tree in Whitewater was sprayed in 1922 as a result of the most extensive San Jose scale campaign the department has undertaken. A total of 2,589 trees and 3,862 bushes on 418 different properties were found infested and were sprayed with scalecide or lime sulfur. Small outbreaks were also discovered at La Crosse and at Rochester, and arrangements made for eradication. Resurveys of areas covered in previous years show the treatment was successful. The insect is still unknown in wintry districts and commercial orchards in Wisconsin, but is causing heavy losses in all other states east of the Mississippi river.

Apple Fire Blight

Promising results have been secured during the past two years in a campaign to control fire blight on a large scale in western Dunn county. Persistent losses in the region caused a general demand for elimination of the susceptible varieties of trees. Through voluntary and compulsory work, supervised by the department, 95% of the infected trees were removed. Observations in the fall showed fire blight had been greatly reduced, although the largest orchard in the neighborhood apparently still contains undiscovered sources of infection.

Danger of Importing Pests

The recent introduction of such major pests and diseases as the European corn borer, Japanese beetle, gipsy moth, potato wart, Mexican bean beetle, and alfalfa weevil in other parts of the United States shows the importance of nursery inspection and plant quarantine measures. Both state and federal regulations are being actively enforced to prevent their reaching Wisconsin. A state pest-reporting service has been organized having 280 local observers who are on the lookout for all cases of unusual injury. Reports on insect damage come in from each county every ten days during the growing season.

The digging and transporting of trees by tourists, especially in white pine blister rust infected territory, has become a serious menace, as many diseases and insect pests can be distributed in this way. By special arrangement with the Conservation Commission all their employes, including the game wardens, have been deputized to aid in stopping this practice.

Nursery Inspection

All nursery stock sold in Wisconsin is inspected by the department. About 300 nurseries per year are inspected. Apple crown gall, poplar weevil and elm canker are the most common causes of condemnation of trees.

WISCONSIN STATE FAIR

Eight years ago the state fair was of mediocre caliber, and its grounds and buildings were pronounced among the poorest in the nation.

During the last eight years the state fair has gone steadily forward, until today it ranks second to none in class, third among the big fairs in premium money paid to exhibitors, and fifth in America in attendance.

Growth of the State Fair

The attendance in 1914 was 108,999. In 1922 the attendance was 267,983, an increase of 146 per cent. The record attendance was that of 1920, when the total for six days and nights was 327,394. Economic conditions in 1921 and 1922 kept attendance figures down, but over eighty per cent in both years was from outside of Milwaukee. In 1921 over 50,000 people were out of work in Milwaukee, and, though conditions were not as bad as in 1922, they were as truly reflected in attendance from Milwaukee as in 1921.

One big feature of the state fair is the admittance of school children free on the opening day, which is known as "Children's Day." In 1922, 58,354 school children were guests of the state fair.

Paid admissions in 1915 were 74,721, and in 1922, 156,525, an increase of 110 per cent.

In 1915 the total premium payments were $47,328.70, and in 1922 the total was $93,544.03, speed included, an increase of 98 per cent. All of the premium money is paid to encourage high-class production, principally in the Badger state.

In 1915 there were 1,790 exhibitors, and in 1922, although two competitive departments were discontinued, the exhibitors numbered 3,814, an increase of 112 per cent. The total number of exhibits in 1922 was 31,326.

Total of gate receipts in 1915 was $47,181.10, and in 1922 the total was $72,899.20, an increase of 54 per cent.

Total of grand stand receipts in 1915 was $7,856.23, and in 1922, the total was $36,355.50, an increase of 360 per cent.

Total receipts from the concession department in 1915 were $8,406.10, and in 1922 the total for this department was $36,410.80, an increase of 305 per cent. In 1915 the total receipts were $74,954.80, and in 1922 total receipts were $177,477.31, an increase of 136 per cent.

Wisconsin Must Have Modern Fair

In 1915 the total operating expenses were $116,416.94, and in 1922 total operating expenses were $272,695.46, an increase of 135 per cent.

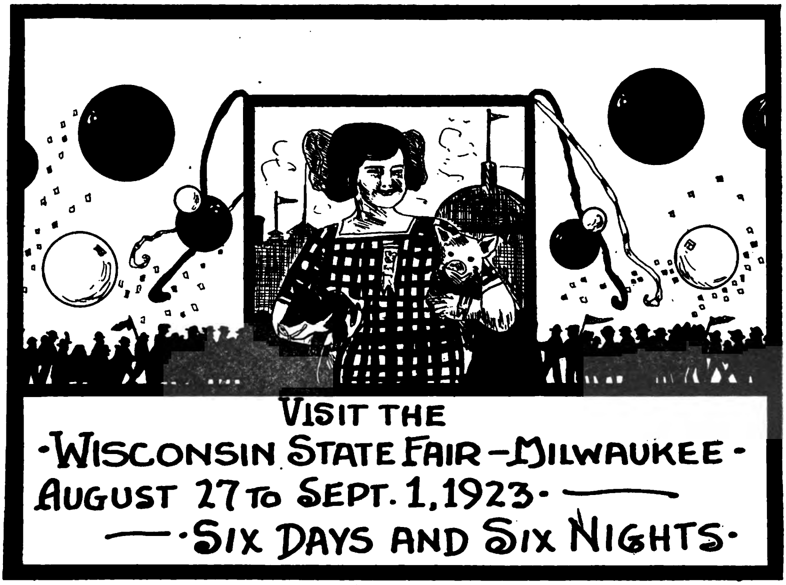
The operating expenses have been high, yet, when compared with the cost of adjoining fairs of the same rank and class, it will be noted that Wisconsin's fair has been put on for a smaller cost than any of the adjoining fairs.

In 1921 the operating cost of the Illinois State Fair was $286,891.00; Minnesota, $352,650.00, and Iowa $294,000.00. In 1922 the cost of the Minnesota State Fair was $362,116.00, and that of Iowa exceeded Wisconsin's cost.

In connection with the cost of the state fair another important fact should be taken into consideration. During the 72 years of existence of the state fair the state has invested in it less than $900,000, and the value of the present state fair plant for fair purposes is $1,693,622. In other words, the state has to show for its state fair investment over $700,000 on the right side of the ledger.

When the state fair became a division of the department of agriculture in 1915, it was an inferior state fair, having an inferior plant, against both of which there was pronounced public sentiment within and without the state. The policy pronounced by the legislature in 1915 was that Wisconsin must have either a good state fair, comparing favorably with adjoining states, or none; that a poor state fair, even though it might prove exceptionally profitable financially, would rank as a detriment to the social welfare and advancement of the state, while a good state fair would be an advantage and highly desirable.

The first aim should be to provide a state fair of this type, and, second, to keep it within as reasonable a cost as possible. The department has endeavored to follow out this ideal and policy, depending upon the excellency of this type of state fair to ultimately bring receipts to a point where they will meet expenditures.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VISIT THE
·WISCONSIN STATE FAIR—MILWAUKEE·
AUGUST 27 TO SEPT. 1, 1923·——
——·SIX DAYS AND SIX NIGHTS·

Features Reducing Income

While other state fairs were erecting buildings during the low-cost period between 1910 and 1914, the Wisconsin fair was standing still; hence we have had but few buildings, and buildings provide valuable space for sale—the source of income. An adequate manufacturers' building, and a building for inside machinery—both of which are badly needed—would in this way bring an additional revenue of at least $25,000. Proper equipment for the concession department in the matter of dining halls, women's building and other buildings usually found on fair grounds would add another $25,000. Approximately $20,000 could be added to the income if the grandstand were completed so that it will attract and accommodate a larger crowd. Insufficient space in the grandstand, lack of shade and protection from rain, has subjected Wisconsin's state fair patrons to exceeding inconvenience. There is no doubt that many people, especially those of Milwaukee, have stayed away from the fair because of lack of convenient and comfortable grandstand facilities. Considerable income has been lost in this way.

The Wisconsin State Fair is located in a corner of the state, and with all probable attendance and income from the east side cut off by the lake. This is a disadvantage which has greatly reduced the income of the state fair in the past as compared with other fairs, and which will always make it far more difficult to make the Wisconsin State Fair pay than any other state fair in the nation.

Modern Premiums High Percentage of Cost

The cost of present state fairs is high largely due to premiums. Wisconsin for instance, pays approximately $75,000 annually in premiums outside of the speed department. This is no higher than other state fairs; in fact, Wisconsin until two years ago was far below adjoining state fairs. Even at these premiums exhibitors do not have much left of their premiums when cost of transportation and upkeep, particularly of live stock and horse racing, is paid. The acts presented before the grandstand and general amusements form another large bill. Some reduction might take place in this cost, but not much. These are the part of the state fair that attract the people and bring the large crowd to the state fairs that do not go to other shows and expositions. The national dairy show at St. Paul in 1921, for instance, had a total attendance for the week of less than 50,000, while the Minnesota State Fair, held at the same place, in the same year, had a total attendance of over 400,000. The entire attendance for the dairy show was less than one-half the attendance for one day of the state fair, held on the same grounds.

There is apparently not a sufficient number who care to attend the horse show. This feature can probably be omitted with a saving of from $7,000 to $8,000, not counting the cost of what should take its place.

The comparison of total costs of the Wisconsin State Fair with others, show that our costs have been smaller, and that there is little opportunity for a reduction. Reductions amounting to some thousands of dollars might be made here and there but such reductions would have to include premiums and entertainment features, and with that comes a serious danger of crippling the fair and putting it in an inferior class.

Adequate Housing Would Save Money

The erection of housing facilities for the cattle, hogs and sheep would annually save from four to six thousand dollars now used for rental of tents and the construction of tying and feeding equipment. Practically 600 out of 1,400 head of cattle at each of the last two state fairs were housed in permanent buildings.

Savings in Auto Races and Fireworks

A saving can also be made amounting to from $6,000 to $8,000 annually by increasing the appropriation to permit the direct purchase of auto races and fireworks instead of the plan made necessary by the present appropriation of allowing them to take a percentage of the receipts. This was a safe and profitable plan while the fair was small, but costs too much under the present development, especially in good weather.

Reduce Net Cost by Increasing Income

The safer way to reduce the net cost of the fair is to endeavor by improvements in facilities mentioned above and by raising rates of selected concessions and space to increase the income. By this means the drawing power and the attendance at the fair will be increased. To this can be added additional publicity, especially in northern Michigan. The average annual growth of the fair during the past eight years should continue, and eventually bring it to a position where it will pay for itself.

Lengthen the Fair by Two Days

In an effort to increase the income and reduce the weather risks, it is also thought wise to open the fair on Saturday and run through Sunday, providing a program can be presented that will be in accordance with observing of the Sabbath. It is estimated that the proper program on these two days will add from $25,000 to $50,000 to the receipts.

In 1921 the Old Mill, a splendid, clean, permanent entertainment institution, was established on the state fair grounds in an appropriate building. This was the beginning of a policy of erecting permanent, clean, attractive entertainment features and the final elimination of the carnival. It is hoped that for the coming year a scenic railway, permanent merry-go-rounds and other riding devices will be erected. Definite arrangements are already under way to bring this about.

With the carnival should also go many of the games of skill. Games of chance have already been eliminated but many of the concessions which are called games of skill are so close to the line and so undesirable that they should not longer be tolerated.

Buildings Needed

In view of the housing conditions for live stock during the past two or three years, the live stock breeders of the 1922 state fair presented a petition to the board for transmission to the legislature, asking for the construction of a new cattle barn, housing 1,000 head of cattle, before the 1923 state fair. The women of the state are also demanding a Women's Building, and there is great need for an extension of the sheep and swine pavilion to the poultry building to accommodate the overflow of poultry, sheep and swine.

Comments of the Press

The daily and weekly press of Wisconsin and the dairy and agricultural and other publications pronounced the 1921-22 state fair equal to any presented in America. Their comments will be found in the report of the division of the state fair, in Part II.

RECOGNITION OF COOPERATORS

It is fitting that recognition should be given to the splendid cooperation and support which has been extended to the work of this department during the biennium by the following agencies:

First and foremost, the splendid confidence, encouragement and backing given all of the work of the department by the governor and legislature.

To the college of agriculture and experiment station:

First, through the county agents who have been exceedingly effective in carrying forward educational programs relating to our work, especially the tuberculosis eradication program, particularly in securing the adoption of the accredited herd and area test programs and obtaining signatures by the stock owners of the counties.

Second, through the farmers' institutes and extension service in carrying forward information to the people of the state on the many lines of work of the department.

The great advantage of having the experiment station and the department of agriculture working side by side in mutual cooperation is particularly illustrated in the work this summer on the tobacco wildfire disease:

Dr. S. B. Fracker, of the insect and plant disease division of the department of agriculture, worked in cooperation with Dr. L. R. Jones and Dr. James Johnson, of the plant pathology and horticulture departments of the station. Drs. Jones and Johnson, national authorities on plant pathology and tobacco culture, the latter representing the United States Department of Agriculture, provided the most up-to-date scientific knowledge of tobacco diseases. Our department of agriculture furnished the authority, experience and methods used in regulatory work necessary to put the program into effect and secure action on the part of the farmers. The plans of work were based on the latest and best scientific knowledge, and backed by the college, gave confidence to the workers to push the program. The authority and experience in field regulatory work made effective these methods, and the two agencies working together secured results which could have been obtained in no other way.

Special mention should be made of the large and splendid cooperation from the United States Department of Agriculture on the part of:

The Bureau of Animal Industry in tuberculosis eradication and hog cholera work.

The Bureau of Plant Industry in grain rust, white pine blister rust, tobacco wildfire and other diseases.

The Bureau of Markets and Crop Estimates in the collection of data on crops and live stock.

Excellent cooperation has also been secured from:

Department of engineering on building operations.

Dairy and food department on pasteurization of the by-products of creameries and cheese factories.

Department of markets on bee and honey work.

Conservation commission on white pine blister rust.

Insurance commission and other departments have also cooperated.

RECOMMENDATIONS

Live Stock Sanitation

Tuberculosis eradication policies should be carried forward to a completion of the state within the next two or three bienniums. The sooner the work is done the less it will cost and the more benefits the state will receive along the lines of health and financial gain.

Provision should be made requiring a tuberculin test of all cattle sold at public sales.

The chief source of trouble and deterrent to progress is the insufficient indemnity fund. An amount approximately three times the appropriation of the past biennium will be necessary to satisfy the demands of farmers for tests by local veterinarians, area and accredited herd work.

Determination should be made on the future policy of area testing on the question whether counties shall participate in paying costs, or that all costs be paid by the state and federal governments as at present. For the first test of an entire county under the area test, and retesting infected herds that appear, the present policy of the entire cost being borne by the state is recommended. Perhaps the same policy should also be followed in future retests, necessary every three years to keep the counties clean.

A fund should be provided for use by the department of agriculture in each county for retesting. Such retesting should probably be done by local veterinarians working under the supervision of the department of agriculture, the testing let to properly prepared men on a competitive bid per head.

Immigration Work

The soil survey should be completed in greater detail in as many additional counties as possible, considering in this connection not only scientific details of soil fertility, but economic conditions as well. Thus the functions of the immigration work will be strengthened, keeping in mind, of course, the settler's interest as the primary purpose and furnishing him full and dependable information. The future welfare and appearance of the state viewed from a broad standpoint requires that land too poor to farm at a profit should be used for forestry purposes instead of being developed into starvation farms.

Dog and Stock Law

The dog and stock law should be modified so that the payments are entered on the regular tax blanks with other taxes, and delinquent taxes be chargeable to other personal property and collected in the same way as other delinquent taxes.

Weed Control Work

That the noxious weeds be divided into two classes; the first class should contain the more dangerous weeds such as Canada thistle, quack grass and mustard, and the remaining weeds of the present list constitute the second class.

Optional authority should be given the department in consultation with the town chairmen and weed commissioners to change weeds from one class to another or add weeds not in either class to the noxious list as special conditions demand.

Provision should be made for closer supervision of the work of the weed commissioners by the department, and so far as possible arrangements should be made to prevent friendship from defeating the enforcement of the law.

Insect and Plant Disease Control

Losses from insects and plant diseases have increased so alarmingly during the past few years that every resource should be employed to combat them.

Support should be given to the federal government in its work of preventing such destructive foreign pests as the European corn borer, Japanese beetle, gipsy moth and potato wart from reaching the Mississippi valley states. The state department of agriculture maintains a field entomologist to assist in the control of insect epidemics. At the same time new plant disease outbreaks are continually arising, a recent example being that of the tobacco wildfire. To control these a field plant pathologist is greatly needed.

The line of work most demanding immediate generous financial support by the state is the grain rust control by means of barberry eradication. An adequate appropriation should enable the department to complete this work within the next three or four years.

DIVISION OF INSECT AND PLANT DISEASE CONTROL

S. B. FRACKER, *State Entomologist*

The continued increase in the number of insects and plant diseases attacking cultivated crops, and the greater public interest in their control, has necessitated the expansion of this division. In addition to the grasshopper outbreak, described in the last report, which has continued unabated, several new problems have arisen.

The most important of these was the discovery in June, 1922, of the presence of tobacco wildfire in Wisconsin. As tobacco is an important cash crop on 7,000 farms in the state, a disease which had caused occasional losses totaling many millions in other areas, is of the most serious nature. All available resources were immediately directed toward its extermination or control. A survey showed the disease present on ninety Dane county farms and control measures were adopted, the results of which are promising.

Continued attention has been given to the possible introduction of the European corn borer and the gipsy moth, but fortunately these two pests have not yet spread as far as Wisconsin. During the past two years, however, the former has extended its distribution from New England and New York as far west as southeastern Michigan, and in all probability Wisconsin corn growers will eventually have to cope with it. Such a result cannot be contemplated with equanimity, for its damage to corn, celery, tomatoes, and other crops in eastern Massachusetts is terrific.

Extensive losses from grain rust, and the resulting injury to milling and transportation interests as well as agriculture, caused last year a general union of all forces in support of the barberry eradication campaign. The formation of the national Grain Rust Conference composed of the various state farm bureaus and similar agencies resulted not only in extensive publicity, but in a materially increased congressional appropriation. Wisconsin's barberry problem is more difficult than that of other states on account of the excessive number of barberries growing "wild" or escaped in woodlots. The number discovered in the state to date is 3,352,124, a figure somewhat larger than the combined total of all other twelve states engaged in the campaign. Evidence is now conclusive that barberry eradication when completed will effectively control the losses from black rust in grain, which has cost Wisconsin from $800,000 to $5,000,000 a year.

New projects undertaken during the two years covered by this report have included the establishment of potato spraying demonstrations for the reduction of hopperburn losses, a large scale fireblight control area, organization of grasshopper control on a township basis, using township funds and the tobacco wildfire campaign mentioned in a previous paragraph. White pine blister rust control and apiary inspection control have made good progress.

In the following pages insect and bee disease control campaigns are outlined first, followed by those dealing with plant diseases. Discussions of special projects such as nursery inspection and the pest reporting service complete the report.

THE GRASSHOPPER CAMPAIGN

BY E. L. CHAMBERS, *Assistant State Entomologist*

Each year the grasshoppers appear to demand their share of the "spoils," but fortunately they usually occur in epidemic numbers in only one section of the state. Under a law recommended by the department and passed by the legislature in 1921, control campaigns have been carried on during the past two years in this section.

The infested area is confined to less than a dozen counties comprising the upper two tiers in the extreme northeastern part of the state —lying between Ashland and Door counties. Here the light soil and uncultivated cut-over stump lands seem to afford an ideal environment for their development.

During the past few years the losses from this pest have been quite serious, consequently the farmers are becoming more alarmed each year, as the intense interest being shown in the control work indicates. During the season of 1920 the grasshoppers, together with the dry weather, took the greater part of the hay and grain crops in some sections. As a result, the cattle were nearly starved in wintering. The farmers were unable to get the necessary material for checking the pest in time to be of any relief.

Epidemics Are Forecast

A survey made during the latter part of May in this district at the time the young hoppers were beginning to hatch disclosed the fact that because of their numbers a serious epidemic could be expected this past season unless checked by climatic conditions. Immediate steps were taken to prepare for such an outbreak.

The town clerks in the grasshopper areas had been warned prior to the town meetings in April that another epidemic could be expected this year, and they were urged to make sufficient appropriations from their town funds for insect control as authorized by the statutes to meet such emergencies.

About the first of June, when the young hoppers were beginning to hatch rapidly, a more careful survey of this territory was made, and by adopting a standard method of computing, the infestation was roughly forecast and the amount of material needed for the poison bait was estimated.

The town chairmen were then visited and advised to make such purchases as seemed necessary to guarantee ample protection. In most instances the purchasing was done by the county agent for the entire county, and then sold to the town chairmen. The white arsenic and banana oil purchased for this purpose is distributed to the farmers free of charge upon request.

Control Recommended

The control measure was the poison bran mash made up according to the following formula:

Bran (coarse)	25	lbs.
White arsenic (powdered)	1	"
Banana oil (amylacetate)	12	teaspoonfuls
Salt	1	lb.
Water	2½	gals. (approx.)

We recommend that in mixing these ingredients the salt and banana oil be added to the water to moisten the dry mixture of bran and powdered white arsenic, and that this bait be applied early in the morning while the dew was still on.

Live Stock Poisoning

The above amount is sufficient to cover five acres applied broadcast, and will not poison stock if used as directed over this area. Warnings were issued against its use where poultry have access to the poisoned grasshoppers, since it may prove fatal if eaten in considerable quantity.

Very few reports of casualties among live stock from the use of bait were received, however, and such cases were all due to carelessness. Several instances were discovered where the mixed bait was left exposed in open pails where hogs could feed on it, or in sacks in which poultry could pick holes.

Cattle and horses were made sick by being allowed to pick up bait mixed too wet and thrown in solid bunches by the handful, but no deaths resulted.

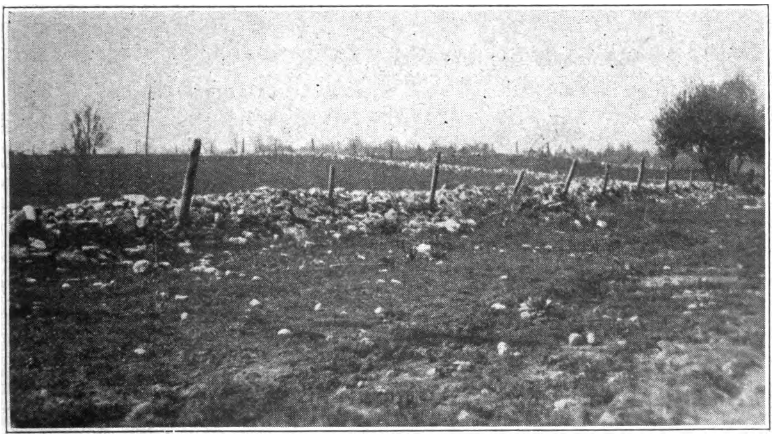


Fig. 1.—Grasshopper breeding ground adjoining grain field.

By feeding a mixture, consisting of a quart of whole milk with a couple of whole eggs beaten up in it, to poisoned animals when discovered within a few hours, several were saved this past season which accidentally fed upon the poison. It proved to be an effective antidote.

Life History and Habits

Success in grasshopper control depends almost entirely upon early application of the poison in order to get the newly hatched nymphs. During early summer and continuing to fall the adult female lays her eggs in several pods of from 20 to 80 eggs each in sand banks and waste lands. Stump lands afford ideal egg laying areas, since the eggs are permitted to winter and hatch in the early spring unmolested.

After hatching the young nymphs remain for several days in the vicinity of their egg beds. It is at this time that they are very easily attracted to the poisoned bait and can be reached by spreading it over comparatively small areas, whereas if delayed until migration begins, much more territory must be covered and the "hoppers" are not so readily killed after they reach maturity.

Publicity was given the subject of control in the local papers and by circular letters sent out by the county agents. The method of dealing with town boards automatically aided in securing extensive distribution of the needed information.

Coöperation Necessary

Unless each farmer spreads the poison, best results are impossible. Success depends largely upon simultaneous cooperation. If one farmer uses control measures and his neighbor does not, results are unsatisfactory owing to the grasshoppers' powers of rapid migration after maturity. The farmers are urged to apply the poison on the same day if possible, and the appointment of a "grasshopper day" seems to be the best solution. In several of the counties the county agent has met this situation by arranging a meeting and calling the farmers together at central points over the county. At such meetings the poison is mixed in large quantities for them, each farmer bringing his own bran.

Cost and Approximate Amount Distributed

This method of control has met with general approval since it has been very effective and the cost to the farmer is less than fifteen cents per acre. The white arsenic cost the town seven cents per pound in 500-pound kegs and the banana oil $3.00 per gallon.

During the past season five counties in the state distributed free of charge over five tons of white arsenic and one and a half barrels of banana oil as shown in the following table:

County	White Arsenic	Banana Oil
Marinette	4,000 lbs.	12 Gals.
Florence	2,000 "	12 "
Forest	2,000 "	12 "
Price	1,200 "	7 "
Oneida	1,000 "	5 "

Accurate figures, if available, showing the actual amount of damage done by the grasshoppers would be striking. Approximate estimates can be arrived at, however. On one large farm in the grasshopper region where poisoning was put off too long and finally entirely neglected, a very promising forty-acre field of clover was entirely clipped before it was realized by the owner. The adjoining fields on the same kind of soil were cut before the migrating hoppers had reached them and yielded nearly two tons per acre. Several hundred dollars could have been saved at a cost of a very few had it been taken in hand in time.

POTATO SPRAYING DEMONSTRATION AREAS

BY E. L. CHAMBERS, *Assistant State Entomologist*

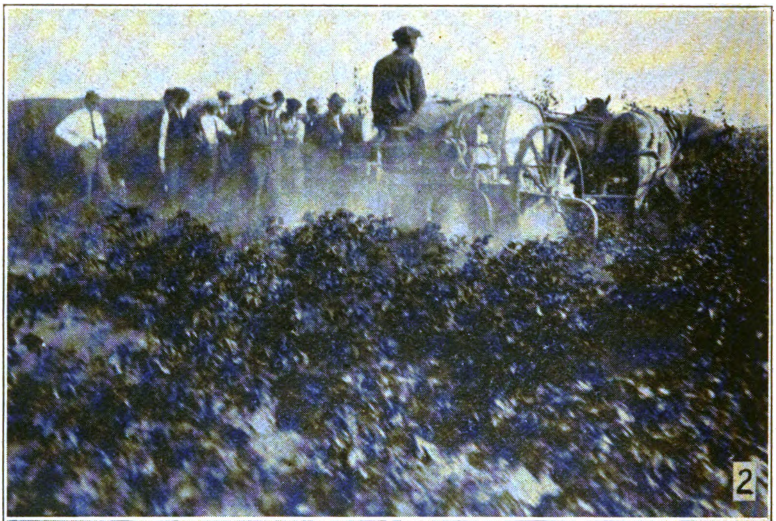
In order to determine more accurately some of the factors responsible for variable results in potato spraying and to demonstrate methods on a commercial scale, the State Department of Agriculture, coöperating with the experiment station, carried on a series of spraying demonstrations during the past season at four different points in the northern potato-growing section.

Following the discovery in 1918 that the potato leafhopper is the cause of potato tipburn or hopperburn, control measures had been worked out in several states. The most successful remedy proved to be the application of Bordeaux mixture to the under sides of the leaves. In Wisconsin, previous to 1922, this measure for a number of reasons had not been generally adopted over the larger potato-growing sections.

The potato hopper is a pest recognized by the majority, but its injury has been greatly underestimated by the average grower. The usual symptom of hopperburn consisted of the premature dying of many promising fields, causing a great reduction in yield. Many causes were attributed to this drying up of the tops. In most cases it was considered natural ripening, no more thought being given until digging time, when the yield would show a serious falling off. As the growers were learning to recognize the characteristic curling and burning caused by the leafhopper, they discovered that a great deal of this early dying was really hopperburn, and became very much interested in its control.

For the demonstrations a special boom was used which had been designed by J. E. Dudley, Jr., of the Federal Bureau of Entomology, so constructed as to get beneath the foliage and flexible enough to permit adjustments at will and fold into a small bundle to facilitate carrying from one point to another. The boom sprayed four rows using three nozzles per row. By means of special clamps for this purpose it was easily attached to any of the standard makes of traction sprayers, and being flexible, was adjustable to any width of row. One nozzle was set from 12 to 14 inches immediately over the center of the row and a drop with a Y furnished with angle nozzles was carried midway between the rows at a point just as low as would clear the ground, thus reaching the under side of the foliage at the proper angle.

The boom (Fig. 3) was constructed of ⅜-inch gas pipe and connected with ⅜-inch steam hose held in place by two clamps at each end. It was fed from the supply tank at two points midway from center to end, thus giving even distribution.



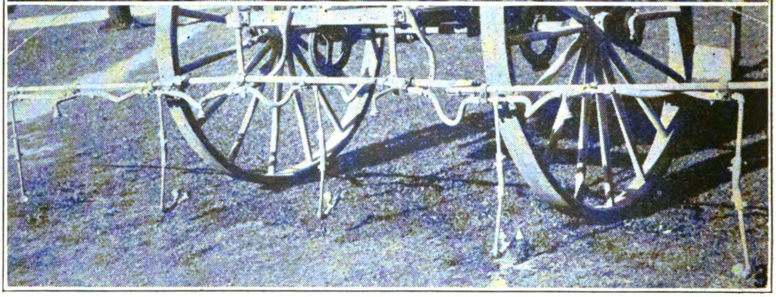


Fig. 2.—Spraying demonstration plot with Bordeaux mixture to control potato leaf hoppers.

Fig. 3.—Special spray boom used on most of the demonstration plots.

TABLE SHOWING POTATO SPRAYING RESULTS

No.	Place	Grower	Nature of soil	Variety	First spray	Second spray	Third spray	Fourth spray	Degree of Infestation	Height at first spray	Date planted 1922	Date dug	Yield sprayed	Yield unsprayed
1	Waupaca	William Culp	Very sandy	Green Mts.	July 7	July 17	July 27	Aug. 5	Moderate	9 in.	May 22	Sept. 26	186	86
2	Waupaca	William Culp	Very sandy	Rurals	July 7	July 17	July 27	Aug. 5	Moderate	5 in.	June 14	Oct. 12	265	180
3	Eagle River	Radcliffe Bros.	Clay Loam	Rurals	July 13	July 24	Aug. 1	----------	Very light	6 in.	May 22	Oct. 13	156	130
4	Pembine	Dixon Bros.	Sandy	Triumph	July 25	Aug. 3	----------	----------	Light	8 in.	June 22	Oct. 6	163	110
5	Pembine	Dixon Bros.	Sandy	Rurals	July 15	July 25	Aug. 3	----------	Very light	12 in.	May 28	Oct. 6	170	153

In order to get a very fine mist that would cover both sides of the foliage without dripping, a disc with a very fine opening was employed, and a pressure of 150 to 200 pounds was maintained. From 75 to 90 gallons of Bordeaux mixture was used per acre. All materials used were carefully strained through a sieve having openings slightly smaller than those in the nozzles and since the sprayer was cleaned out before filling, nozzle clogging was practically eliminated.

In an attempt to avoid the nuisance of nozzle clogging the growers often resorted to the use of nozzles with such large openings that a mist was impossible and the spray material ran off of the unevenly drenched foliage. Another tendency sometimes causing unsatisfactory results was the failure to change the discs after they had worn the openings too large for good results. At 200 pounds pressure they must be changed after about every 1,500 gallons of spray have passed through them. A pressure of 175 pounds is essential for satisfactory results.

Several varieties were taken at each of the four localities and approximately one acre of each was sprayed, a check plot of smaller size adjoining it. The check was sprayed with arsenate of lead only, to control the potato beetle. Arsenate of lead was combined with the Bordeaux spray as well for this purpose. The spraying was started at Waupaca on July 7th and applied three times at an interval of about ten days each. During the last spraying, about the first of August, a contrast was showing quite strikingly between the checks and Bordeaux sprayed plots of Irish cobblers at Stella Lake, and Green Mountains at Waupaca where the checks were practically all brown, while the test plots were still green. At the time of the last spraying the vines in all of the different varieties and localities had practically closed up the rows, requiring driving over the tops.

Results of Tests

The data on the various plots are shown in the accompanying table.

As will be seen from the above table the increase in yield resulting from the application of Bordeaux mixture ranged from 17 bushels per acre in the case of a very light infestation of leafhoppers on Rural New Yorker at Pembine, to 100 bushels of Green Mountain at Waupaca, where the insects were more abundant.

At the latter place two additional observations were made, not shown in the table. The owner in spraying the remainder of the field used a boom of his own bearing two nozzles per row directed downward at an angle.

The yield on an acre of Green Mountain sprayed five times with this equipment, in the same field with the demonstration plot, amounted to 128.6 bushels, showing a loss of 58 bushels from a failure to cover the under side of the leaves. In the Rural New Yorkers sprayed in this way the yield was 250 bushels, a loss of 15 bushels from the returns in the demonstration area.

Nearly all the potatoes in the various fields graded U. S. No. 1, except in the case of the Green Mountain variety at Waupaca, where the superiority of the sprayed plot is quite striking, as shown in the following figures:

	U. S. No. 1	U. S. No. 1 small	Culls	Total
Demonstration plot	144	36	6.5	186.5
Check	49.5	29.2	4.5	83.2
Owner's spraying	90.0	33	5.6	128.6

CRANBERRY INSECT SURVEY

During the past season the division has maintained a cranberry pest control and survey service which resulted in saving several thousand barrels of cranberries. By pointing out centers of insect infestation which had remained unnoticed by the owners and by issuing periodical circular letters describing conditions and suggesting control measures, the various growers were able to keep in close touch with conditions and protect themselves against serious loss.

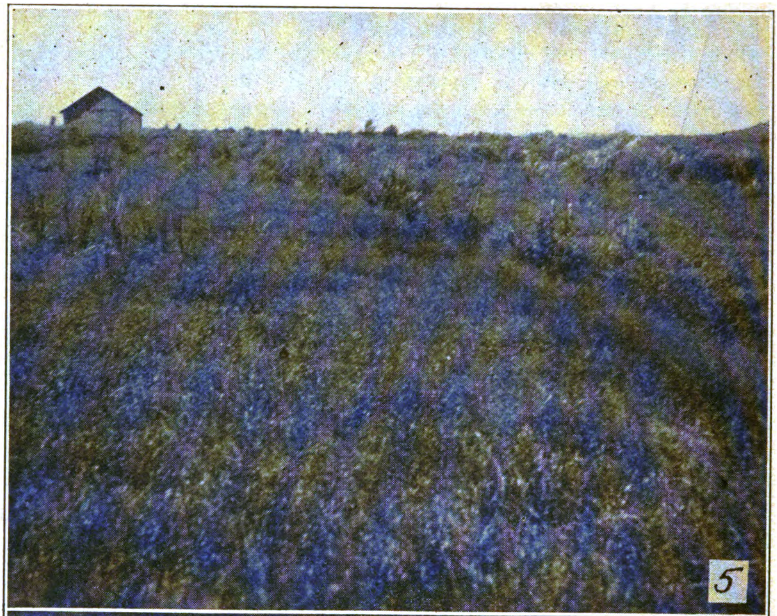
Following repeated heavy damage from cranberry insects in 1920 and 1921, the State Cranberry Growers' Association requested the establishment of this work in 1922 survey and control project. The cranberry experiment station previous to its discontinuance in 1917 had worked out successful control measures for most of the important pests of that crop, but the growers were having trouble in determining the degree of infestation early enough to be of value and in timing flooding and similar insect control measures.

Mr. O. G. Malde, deputy in charge of this work, visited every cranberry section of the state several times during the season and was on every important bog. The growers quite generally followed his recommendation, with the result heavy loss from insect damage occurred in only one location. There the flood was delayed a day or more too long.

The black headed vineworm *(Rhopobota, naevana Hübner)* proved to be the most destructive pest of the season. The larvae were found at work during the third week of May throughout most of the cranberry producing area, the most serious infestation occurring north of Mather, Wisconsin. The latter bog was supplied with insufficient water and the crop was eventually an almost total loss. The second brood of this insect was abundant, June 22 to 28, wherever they had not been controlled by flooding in May.

The yellow headed vineworm (*Alceris minuta* Rob.) and the oblique banded leaf roller (*Archips rosaceana* Harris) were observed in considerable numbers, but caused little total injury.

The tipworm (*Cecidomyia oxycoccana* Johnson) was first discovered at work on June 5 near Wanens and after that was found generally distributed throughout the state the remainder of the season. Several



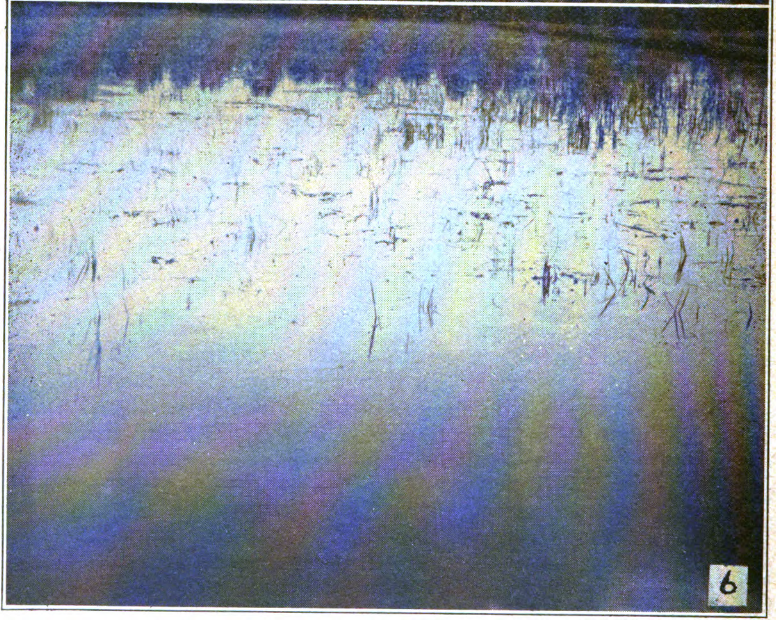


Fig. 5.—Neglected cranberry bog on which there was a total loss of crop because insect control measures were not applied.

Fig. 6.—Flooding cranberry bog for fire-worm control.

experimental floods were tried as a possible control measure, but the efficiency proved only about fifty per cent.

Another pest of foremost importance this season was the cranberry fruitworm (*Mineola vaccinii* Riley). Control measures were used to some extent in combating it, but not as generally as in the case of the vineworms. The abundant crop of 1922 was earlier than usual and the development of the insect later, the adult moths not appearing in numbers until after the first of July. Consequently the percentage of injury was less than in 1921.

In connection with the survey the usual nursery inspection of bogs from which plants are to be sold was carried on. Nine applications were received and a certificate was granted in each case. Where false blossom was present the certificate was limited to varieties without that disease.

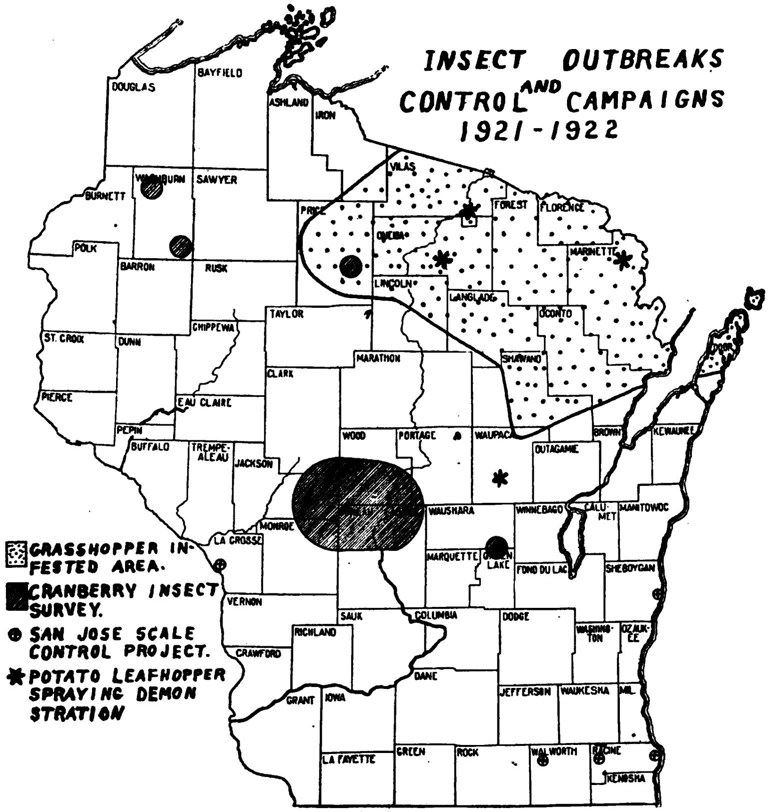
Minor insect pests and diseases reported were:

False yellowhead vineworm (*Dichelia sulfureana* Clemens).

Cranberryweevil (*Anthonomus saturalis* LeC.).

Leafhopper (unidentified).

Hard rot and tip wilt (*Sclerotinia oxycocci* Wor.).



INSECT OUTBREAKS AND CONTROL CAMPAIGNS 1921-1922

SAN JOSE SCALE

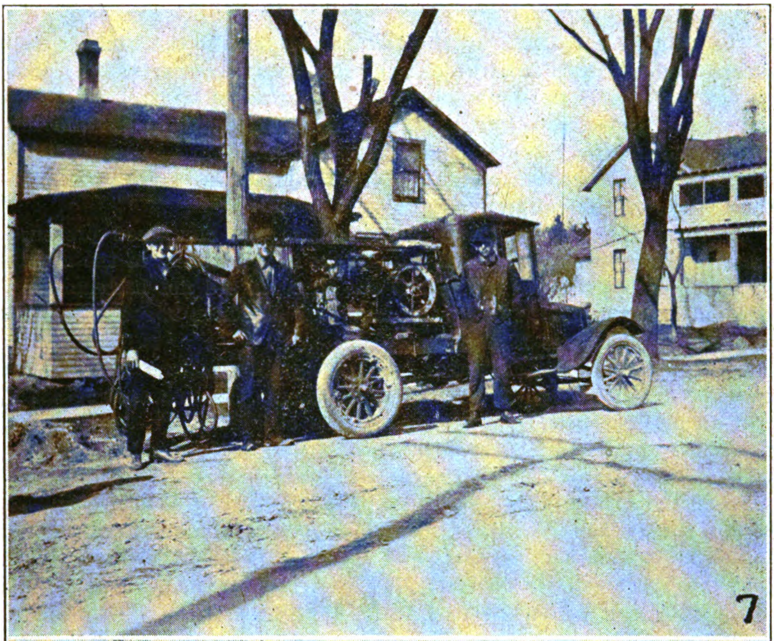
Nearly every fruit tree in Whitewater was sprayed in 1922 as a result of the most extensive San Jose scale control campaign the division has undertaken. The insect had been established in that location for a dozen years, but lack of local support caused a delay in control measures. The death of a number of apple trees in the city in 1919 and 1920 focused popular attention on the subject and a spraying campaign was undertaken the following year with the unanimous support of the city council and park board.

The survey was conducted by E. L. Chambers, field entomologist, and the spraying by Charles Gilbert, a local man, under Mr. Chambers' direction. A total of 2,589 trees and 3,862 bushes were found infested on 418 different properties. On account of the way in which lime-sulfur spots buildings painted white, scalecide was used almost entirely.

A second treatment will be needed in 1923, as the infestation was severe in certain sections. The work was done under the pest control statute, the cost being charged against the property, but contrary to conditions a few years ago, opposition was almost negligible.

Small outbreaks were discovered in the parks of La Crosse and at Rochester. The La Crosse park board gave the matter immediate attention and applied a strong dormant spray which seems to have eradicated the scale completely so far as can be determined. The Rochester case involves properties on which the susceptible trees and shrubs will be treated at once.

Surveys of cities in which such campaigns had been carried on in previous years were also made. The work in Sheboygan and Beloit seems to have been entirely successful, and the scale is now very rare in Madison and Milwaukee. The only additional cities in which the insect is known are Racine and Kenosha, in the latter of which it appears to be firmly established. San Jose scale is still unknown in country districts and commercial orchards in Wisconsin.



Figs. 7 and 8.—Spraying for San Jose scale at Whitewater.

BEE DISEASES REDUCED*[1]

The principles outlined in the last report remain the basis of bee disease control, the plan of which is divided into three parts: (a) area survey for American foulbrood and application of control measures under the inspectors' direction; (b) close restriction on the moving of all bees and used bee supplies; (c) demonstration and educational work on both European and American foulbrood in cooperation with the College of Agriculture.

Increased demand for clean-up campaigns and continued pressure from county associations resulted last year in a doubling of the appropriation for bee disease control.*[2] The increase did not become effective until July 1, 1921, so that the first year in which it could be used to the best effect was 1922.

Previously the chief inspector had been greatly embarrassed by demands for increasing the inspection areas and the natural reaction was an attempt to spread available funds over as much territory as possible. Beginning in 1922 it has been found best for a team of two inspectors to devote their entire time to a single county during a season and the results have been more satisfactory. An incidental effect of this change has been the discovery of American foulbrood in many townships which had been ignored before on account of indications that they were entirely healthy.

Progress may be summarized as follows:

Calumet county, begun in 1918, was first completely covered the following year. Thirty-five of the 122 yards inspected were found infected with American foulbrood. This number in 1920 had been reduced to 21, and in 1921 a recheck of diseased yards showed only six, which were cleaned up. A second recheck of this county is planned for 1923.

Dane county is the only one in which progress has been unsatisfactory, the difficulty being due to several causes. Beekeepers in this county are selling infected honey in large quantities near their own yards and reinfection comes in part from honey containers thrown away. Disease has also been present for forty years and the producers are unwilling to shoulder the temporary losses which would be caused by a drastic clean-up of honey houses and equipment. Since 1920 work in this county has been temporarily discontinued.

Fond du Lac county was begun in 1921 and the western half surveyed but not rechecked. Of the 66 apiaries found infected, 27 cleaned up, nevertheless leaving 39 still diseased in 1922. The number of infected colonies decreased from 208 to 96; and the percentage of infected colonies decreased from 8.5% to 3.9%.

The eastern half of Fond du Lac county showed forty-two infected yards in 1922 out of 183 examined. The number of diseased colonies was 223. As it was possible to recheck all these places in 1922 a marked improvement is expected next season.

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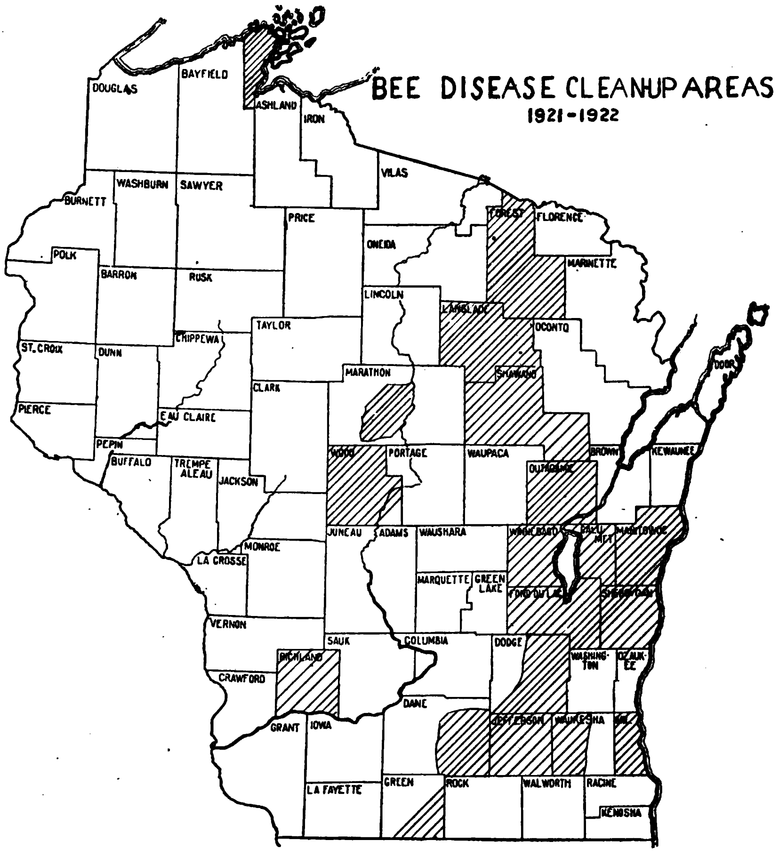
*[1] This work was under the immediate direction of H. L. McMurry in 1921 and of C. D. Adams in 1922.

*[2] As used in this report, "bee disease" refers to American foulbrood unless otherwise specified.


BEE DISEASE CLEANUP AREAS
1921-1922
DOUGLAS
BAYFIELD
ASHLAND
IRON
VILAS
WASHBURN
SAWYER
BURNETT
PRICE
ONEIDA
FOREST
FLORENCE
MARINETTE
POLK
BARRON
RUSK
LINCOLN
LANGLADE
OCONTO
TAYLOR
ST. CROIX
DUNN
CHIPPEWA
MARATHON
SHAWANO
DOOR
PIERCE
EAU CLAIRE
CLARK
PEPIN
BUFFALO
TREMPEALEAU
JACKSON
WOOD
PORTAGE
WAUPACA
OUTAGAMIE
BROWN
KEWAUNEE
MONROE
LA CROSSE
JUNEAU
ADAMS
WAUSHARA
WINNEBAGO
CALUMET
MANITOWOC
MARQUETTE
GREEN LAKE
FOND DU LAC
SHEBOYGAN
VERNON
SAUK
COLUMBIA
DODGE
WASHINGTON
OZAUKEE
RICHLAND
CRAWFORD
DANE
GRANT
IOWA
JEFFERSON
WAUKESHA
MIL.
LA FAYETTE
GREEN
ROCK
WALWORTH
RACINE
KENOSHA

In Grant county, the clean-up of the northeast corner near Muscoda appears to have been entirely effective, only one infected apiary of three colonies having been discovered since 1919; the latter were destroyed, the owner not wishing to continue beekeeping.

The survey of Jefferson county was begun in 1918 when 61 of the 153 apiaries examined (or 40%) showed American foulbrood. A crop failure prevented treatment that year and the enlarged area covered in 1919 showed 92 apiaries infected among 176 inspected. This was brought down to 36 in 1920, 28 in 1921, and 26 in 1922. The number of infected colonies during the same period was reduced from 240 (or 17.7% of the number examined) to 37 (or 2.4%). This does not include the Lake Mills-Waterloo section of the county, which was not undertaken until 1922 because a preliminary reconnoissance survey had failed to reveal foulbrood in that neighborhood. When carefully inspected this past year there were found to be nine infected apiaries containing 23 colonies with disease.

Langlade county appeared to have been cleaned up entirely in 1920, but an infected yard was moved into Antigo from outside the state the following spring. In 1922, 19 infected colonies were found and cleaned up in 4 apiaries, all others apparently being free from disease.

Manitowoc county was the first one undertaken on the area clean-up plan and in 1917 and 1918, 21 apiaries out of 124 inspected, were found with the disease. As a result of the campaign American foulbrood seemed to have been wiped out by 1919. At that time it was believed that a revisit to infected yards only was sufficient, and the inspectors working in that vicinity, it was found later, neither examined every colony in every yard nor looked over every frame. Development of the work in other districts later showed such methods unsatisfactory, so it was not a surprise when the resumption of the Manitowoc work in 1922 showed a heavy infection remaining near Reedsville. Two hundred ninety-seven diseased colonies were discovered in 22 yards. Under more recent methods this condition is expected to improve rapidly.

In Milwauke county more difficulty has been experienced in locating all the apiaries than in other areas. The number of infected yards in 1919 was 62 out of 137, or 45%, which had been reduced in 1922 to 28 yards out of 204, or to 13%. The proportion of colonies infected for the past four years has been 11, 7.8, 4.8, 2.9, respectively.

Outagamie county was never completely surveyed until 1922, when 77 infected colonies were found in 24 apiaries out of 228 yards inspected.

Preliminary survey of the southern tier of townships of Richland county was made in 1917 and part of the area cleaned up. Work was not renewed until 1920, when 16 infected yards were discovered among 87 examined. The area has been increased since and in 1922 15 infected yards were found among 206 inspected. In addition, one township in the extreme northeast corner of the county begun in 1922 showed 17 apiaries infected among a total of 29. In spite of these increases in area covered, the per cent of infected colonies has been as follows: 1917, 17.5%; 1920, 4%; 1921, 7%; 1922, 4%.

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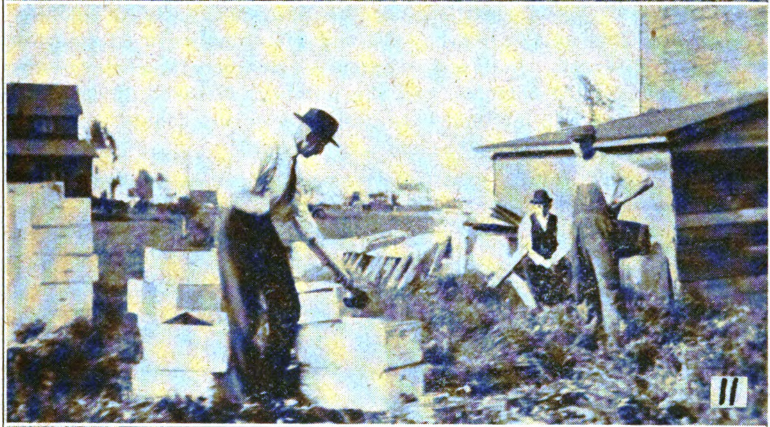

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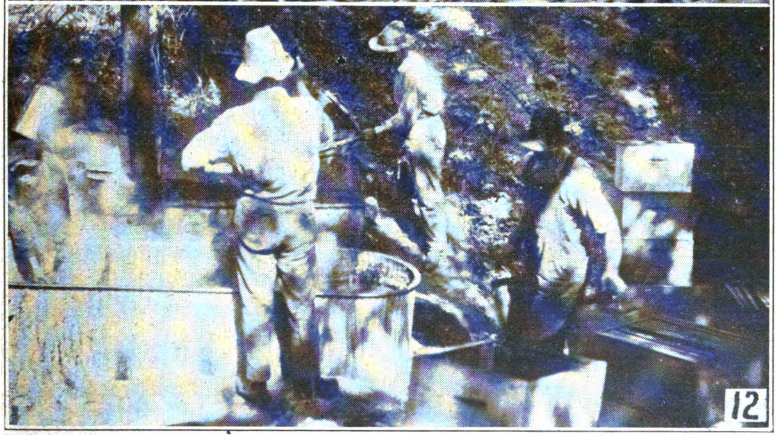

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Figs. 10 and 11.—Scorching hives for disinfection.
Fig. 12.—Boiling infected equipment in lye water.

Shawano county has never been given a complete area clean-up survey. Efforts by local inspectors have, however, reduced the number of known infected apiaries from 12 in 1919 to 4 in 1922.

In Sheboygan county the first approximately complete survey which came in 1921 resulted in the discovery of 78 infected colonies in 17 apiaries, which the following year had been reduced to 34 infected colonies in 13 apiaries. About 136 yards have been covered in the Sheboygan campaign.

Work in Winnebago county has been very successful in spite of the fact that all work in that county in both 1919 and 1920 was done after August 1. The percentages of infected colonies for the past four years have been 13.4 3.5, 3.3 and 2.8, respectively. In 1921, twenty-five apiaries were found infected and they contained 81 diseased colonies; 180 apiaries were examined. In 1922, 13 apiaries and 51 colonies were infected out of 227 yards examined.

Preparations have been made for clean-up campaigns in Waukesha, Washington and Wood counties. In the first named, 1,042 colonies were examined in 94 apiaries in 1922, and 115 colonies in 15 apiaries were found diseased. In Wood county, the numbers inspected were 62 apiaries and 1,102 colonies, and the numbers diseased 16 apiaries and 119 colonies. In neither case was the entire county covered. Work in Washington county has not commenced.

The total results for the past two years have been as follows:

	1921	1922
Apiaries inspected................	1,473	2,354
Colonies inspected................	24,332	30,731
Apiaries with American foulbrood.	338	426
Colonies with American foulbrood.	1,573	2,027
Percentage apiaries infected......	22.9%	17.6%
Percentage colonies infected......	6.4%	6.6%

The gradual completion of clean areas and the addition of heavily diseased ones will, it is expected, keep the total percentage of infection at about the same level for several years to come in spite of its rapid decrease in individual counties. Disease is usually reduced at the rate of about 50% a year for the first year or two, but when the infection is reduced to about 2% of the total number of colonies in a county, it becomes very persistent, and accidental introductions tend to balance what is gained each year. This percentage is low enough to take American foulbrood out of its place as an important factor in honey production, but leaves it potentially very dangerous.

Methods of the elimination of "the last 2%" are now being studied and will be given special attention next season. The problem is largely one of commercial beekeeping, for the apiary which carries over American foulbrood after a three-year campaign is always two or three times as large as the average for the district. In Richland county, for example, the ten apiaries which have been carrying over disease since 1920 average 41.4 colonies in size and only two contain less than 20 colonies. The average size for the county is 16 colonies.

Governing the Spread of Foulbrood

The most common and dangerous means of distributing American foulbrood is through the sale and transportation of bees and used bee supplies. In spite of laws in many states prohibiting the sale of infected material, diseased apiaries have been shipped here and there, until now the bees in nearly every section of the United States are exposed to American foulbrood.

In 1919, the Wisconsin legislature passed a law prohibiting the transportation of any used bee material without a permit or inspection certificate. This has proven very effective in limiting the distribution of disease. In 1921, 510 applications were received for such permits and in 1922, 590 applications. About one-fifth of these were from apiaries which had been inspected within a year and a similar proportion were referred to local inspectors for special inspections. The others were for moving such short distances that there appeared to be no danger of distributing disease.

As the apiary inspectors now cover one-sixth of the area of the state, having examined 30,731 colonies in 2,354 different apiaries in 1922, it is possible to determine with some accuracy the spread of disease.

In general it may be said that in the area clean-up counties there is no evidence that new yards are becoming infected. The only indication of any new appearance of American foulbrood in an area clean-up district was in northern Jefferson county, where a beekeeper, in violation of law, brought in an infected apiary from Dodge county. Two other colonies in healthy yards picked up infection almost immediately, but the inspectors were fortunately able to locate the source. The owner of the material moved was fined and the infected colonies destroyed.

Two cases of infected yards being moved into Wisconsin without inspection certificates from neighboring states have been discovered. Both of these have proven very serious and as the apiaries were large elimination of disease has taken some time. More satisfactory arrangements have since been made in a general inspectors' conference and it is believed that this source of disease has been stopped.

The only other new discoveries of disease since the last report have been at Cassville, where bees were found carrying infected honey across the Mississippi river from Clayton county, Iowa, to Grant county, Wisconsin; and a so-far-unexplained appearance of the American foulbrood in one yard in Bayfield county. It is believed the complete eradication of the latter case is being accomplished.

As a contrast to this limited distribution many applications for the transportation of infected yards into clean territory have been refused and the yards have been disposed of locally. A combination of the gradual reduction of foulbrood in its present locations, and definite prevention of spreading, offer the only practicable solution of the American foulbrood problem.

Education and Organization

Extension work in beekeeping is under the direction of the college of agriculture and no separate meetings have been held by the state department. The inspection service has, however, assisted in the general adoption of improved beekeeping methods in two ways: (a) through direct instructions and advice by inspectors, and (b) by talks on bee diseases and honey marketing at practically all the annual meetings of county associations.

Inspectors are in all cases the best informed bee men it is possible to obtain. They are nominated by local associations and are appointed as a result of civil service examinations, about one-half the applicants passing. Throughout the season of 1922 sixteen full-time men were employed and twenty-eight additional county and district inspectors worked from one to thirty days each. Since they visited and talked with over twenty-three hundred beekeepers and went through all their colonies, their influence for improved bee culture can hardly be overestimated.

The chief inspector acts also as the honey grading supervisor for the department of markets. In this dual capacity he attends the meetings of county associations, discussing honey standardization and marketing as well as the control of bee diseases. The attendance at such times reaches a total of 2,083 for the season, about three-fourths of them from uninspected apiaries. The department is therefore in personal touch with over 3,800 beekeepers annually.

The control of European foulbrod is considered a problem of normal bee management rather than one requiring special treatment. Inspectors therefore do not compel remedial measures in apiaries with this disease, but give advice regarding it. A considerable improvement in the quality of queens, winter protection, and quantity of stores is being noted by inspectors as a result of educational efforts along this line in past years. This subject is also discussed in all county and local meetings. As an example of the amount of European foulbrood present, the figures for the 1,473 apiaries inspected in 1921 are 126 infected apiaries in 28 counties.

THE "WILDFIRE" DISEASE OF TOBACCO IN WISCONSIN*

By G. H. CONANT, *Deputy Entomologist*

The disease known as "Tobacco Wildfire" is of a very recent origin in the United States, at least as far as definite knowledge and investigation are concerned. It was identified for the first time in the Carolinas in 1917, when a great deal of damage and loss was caused to the tobacco crops of that section of the country. A careful study of the disease was immediately begun. As a result its symptoms and characteristics are now well known, but up to the present time no cure or control measures of absolute effectiveness have been worked out. The region affected in this country has increased in size from year to year until, according to the latest count, fourteen tobacco-growing states have been forced to recognize its devastations to a greater or less extent. Since Wisconsin's tobacco territory is so far separated from these regions it was hoped that the disease might be kept out of Wisconsin. However, "Wildfire" made its appearance in Wisconsin during the early summer of 1922. The agency by which it entered the state is as yet unknown.

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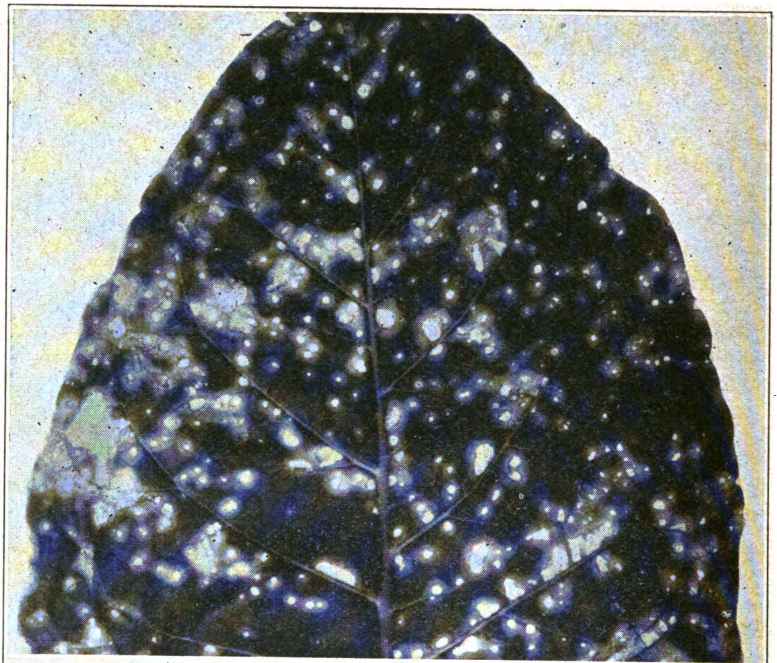
* Prepared by G. H. Conant, Inspector in charge of tobacco wildfire control.

The Cause and Nature of "Tobacco Wildfire"

The name "Tobacco Wildfire" has been given to this new tobacco disease because of the rapidity with which it has been known to spread under certain conditions. Careful examination of infected tobacco plants has shown that the disease is bacterial in nature, being caused specifically by an organism known as *Bacterium tabacum.* An organism closely related to this form has been recognized for several years as the cause of "Wisconsin Rust" or "Bird's-eye Spot," but from a commercial standpoint the latter is not of extreme importance, for it neither spreads as rapidly nor does as much damage to the tobacco as does "Wildfire."

"Tobacco Wildfire" may be recognized in the early part of the season by its appearance in the seed-beds. This fact at once distinguishes it from "Wisconsin Rust," which is never found on seed-bed plants. As is the case with ordinary rusts, "Wildfire" attacks only the soft parts of the tobacco leaves—not the stem or roots. In from six to eight days after infection has taken place the leaves of the infected plant develop pale or faded-green (chlorotic) spots which typically are almost perfectly round and which develop ordinarily to about the size of a dime. If the infection has been heavy the spots may be so close together when small that they unite upon growth so as to form irregular blotches on the leaf or finally so as to cover the entire leaf. These spots remain a light yellowish-green for a number of days or even up to a week or two, but finally the infected area dies, leaving a uniform light-brown patch which eventually falls out, leaving a puncture the size of the original spot. The fact that the chlorotic area has a very definite edge and fades to a uniform brown also help to distinguish the disease from "Wisconsin' or "Bird's-eye Rust," which has chlorotic areas of indistinct margin which finally develop concentric rings of light and dark brown, giving the appearance of a bird's eye.

If plants so infected with "Wildfire" are transplanted from seed-bed to field they rarely outgrow it, and never lose it entirely. Occasionally the germs enter the growing tip of the plant, causing it to turn yellow, thus stopping the further development of the young plant. Under the stimulus of heavy, dashing rains, especially when followed by warm weather, the infections spread with surprising rapidity from leaf to leaf and from plant to plant, so that whole fields may be destroyed within a few days. Other factors probably affect the spread of the dis-



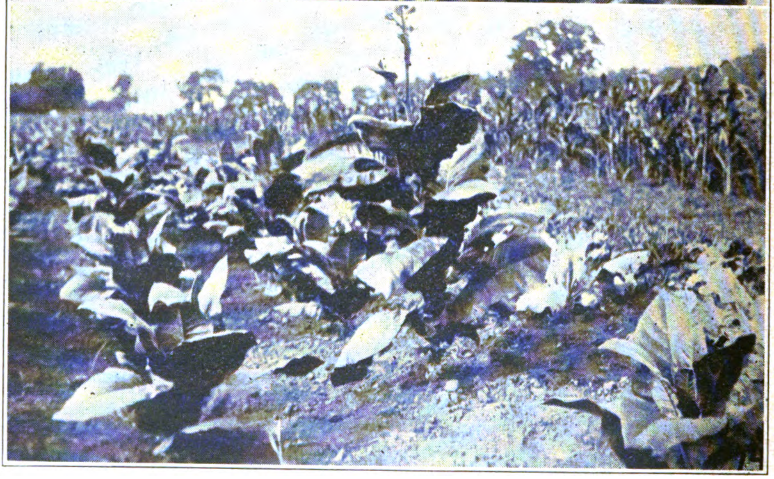


Fig. 13.—Tobacco leaf infected with wildfire.

Fig. 14.—Tobacco field from which wildfire infected plants have been removed.

ease, but rain and wind are the only two which are definitely known. Experiments in artificial inoculation of tobacco plants show that infections occur only in the presence of moisture, and rarely without some mechanical injury to the leaves, such as puncturing or tearing. Thus the probable effects of rain and wind are explained. Aside from the conditions of moisture and slight damaging of the leaves, "Tobacco Wildfire" seems to have no natural checks, except perhaps that it exhibits a preference for thrifty, fast-growing plants over slow, stunted ones. If conditions are right it may spread at any time during the season from planting to harvest, regardless of field boundaries, variety of tobacco, of soil or culture.

Wisconsin Invaded by "Tobacco Wildfire"

The first report of the presence of the disease in Wisconsin came during the latter part of June, 1922. Several tobacco growers in the township of Burke, Dane county, noticed the characteristic "spots" on plants in the seed-bed or on those recently transferred to the field. They also observed that the plants did not grow normally, but remained small and turned yellow. Samples were brought to the Agricultural Experiment Station at Madison, where the presence of the disease was readily detected. In one case it was found that over 50% of the plants in the field were infected in the bud. Dr. James Johnson, in charge of tobacco disease work at the Experiment Station, immediately made a rapid survey of the remaining tobacco fields and seedbeds in the vicinity of Burke. As a result, "Wildfire" was found to be present on about thirty farms, and in each case the infection was found to have originated in the seed-bed. The matter was then referred to the State Department of Agriculture, under the immediate direction of the state entomologist.

Since the disease at first appeared to be localized in the township of Burke, a meeting of about sixty tobacco growers from that town was called on the evening of July 5, with the hope of adopting measures suitable to the control or possibly complete eradication of the disease. The growers present appointed a committee to meet with department representatives for the purpose of drawing up regulations. The following were adopted:

Madison, Wisconsin, July 6, 1922.

Official Regulations for the Control of Tobacco Wildfire

(Bacterium Tabacum)

The following regulations, prescribed by the Wisconsin Department of Agriculture under the authority of section 1494—1 to 1494—10*i* of the statutes apply to all farms on which the disease known as tobacco wildfire *(Bacterium Tabacum)* occurs and have the force and effect of law.

They were adopted in principle by a meeting of sixty tobacco growers of the town of Burke and vicinity on July 5, 1922, and were reviewed and formulated in detail by the following committee appointed to represent the growers in cooperation with the department.

Gunder Felland (Chairman) August C. Holscher
Albert Larson Carl Sachtjen
Herman Lothe

These regulations have been approved by the representatives of the agricultural experiment station and the United States Department of Agriculture. Their purpose is to prevent the further distribution of tobacco wildfire and aid in the eradication of the disease from Wisconsin.

Immediate Action

I. All plant beds on affected farms shall be destroyed without delay, preferably by burning the plants before plowing under. All covers of 1922 plant beds shall be boiled two hours; and all lumber used in the seed bed frames shall be burned or sterilized as follows:

Scrub thoroughly with a 1-500 solution of bichloride of mercury. Proceed systematically so that all surfaces which may be contaminated are exposed to the action of the solution. This may be done with a mop or broom. Allow this solution to act for from one to two hours and then clean well with water. Bichloride of mercury is a powerful poison to man and animals and subsequent removal by thorough washing and flushing is necessary.

II. All plants showing infection in the bud *and all infected leaves of other plants are to be taken off the field, and destroyed as soon as discovered.* The entire field should be inspected every three or four days and removal of leaves and plants showing wildfire spots should take place immediately.

III. All fields showing fifty per cent or more of plants infected in the bud are to be destroyed entire.

IV. All persons except owners and necessary workers are to be kept out of infected fields.

Measures to Protect 1923 Crop

V. Fields infected in 1922 shall be plowed within ten days after harvest, or before the suckers get a good start.

VI. No tobacco seed shall be grown on infected farms, and seed from uninfected areas or seed sterilized under supervision shall be used for the 1923 crop.

VII. On all infected farms the seed beds and fields in 1923 shall be located on land not planted to tobacco in 1922.

VIII. Only new or sterilized covers and lumber shall be used for 1923 seed beds.

IX. Rubbish in the sheds from 1922 crop must be burned and the stalks must not be applied to 1923 tobacco fields.

X. No plants shall be set out in 1923 from seed beds in the infection area until after they shall be examined and passed by inspectors of the Department of Agriculture.

These regulations shall take effect immediately.

S. B. FRACKER,
State Entomologist.

C. P. NORGORD,
Commissioner of Agriculture.

The regulations, as given above, required the destruction of entire fields of tobacco only when a bud infection of 50% or more was present, and the picking and destruction of infected leaves or pulling of bud-infected plants in other cases. Replanting in such cases of destruction was to be from seed-beds certified as being free from the disease. As a result seven owners of infected fields destroyed them in whole or in part and replanted with healthy plants. The results in each case appear to have checked the disease entirely. These regulations were directed at any further spread of the disease during the current season. Regulations relating to succeeding crops will be mentioned later.

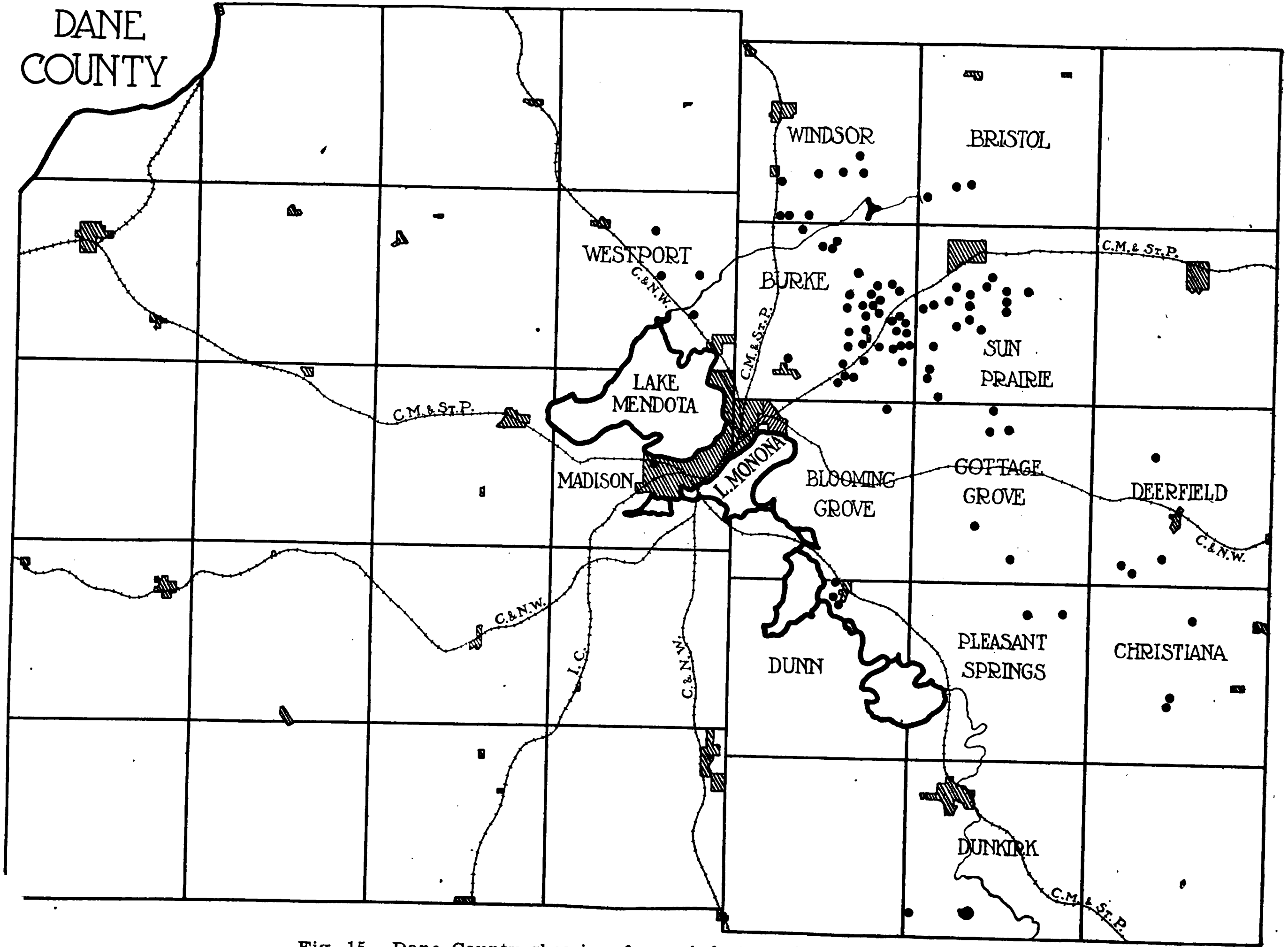


Fig. 15.—Dane County showing farms infested with tobacco wildfire.

Further Survey Work

Meanwhile inspectors were sent rapidly through the main tobacco districts of Dane and Vernon counties. A few additional cases were discovered in the north and east of Dane county, but none in Vernon county. The scattering cases outside of the town of Burke, however, showed the advisability of a complete survey of Wisconsin tobacco territory. The territory covered during the next few weeks included the whole of Dane county, the southern portion of Columbia, the western portion of Jefferson, the northern portions of Rock and Green counties, and the important tobacco areas in Vernon county. Less information was secured regarding Crawford, Trempealeau and other counties. The result of this survey was to localize the disease in the eastern half of Dane county, but fairly well distributed among thirteen townships.

The final count gave the following figures: township of Burke, 36 cases; Sun Prairie, 19; Windsor, 8; Cottage Grove, 5; Deerfield, 4; Westport, 4; Bristol, 3; Christiana, 3; Dunn, 3; Pleasant Springs, 2; Blooming Grove, 1; Dunkirk, 1; Madison, 1, making a total of 90 infected farms. The impracticability of attempting to eradicate the disease completely in one season was realized, and all efforts were then directed toward checking any possible spread during the current season.

Control Measures

The chief control measure following the planting season was that of picking and destroying all badly infected leaves. This measure was aimed chiefly at further spread in the fields already infected. In cases of heavy infection it was found necessary to pick from three to seven of the bottom leaves from each tobacco plant. Thus some idea may be formed of the magnitude of the work in such fields.

Wherever the work assumed such proportions, the State Department of Agriculture offered to stand from one-half to two-thirds of the expense incurred in picking—such assistance to be rendered in money, or in labor where the farmer was unable to secure the necessary pickers. For this purpose the department maintained two crews of four men each to work with the farmers in cleaning up the infected plants.

It will be recalled that "Wildfire" spreads chiefly in the presence of excessive moisture and of injuries to the tobacco leaves. For this reason the picking of leaves was performed only during dry weather, and with as few injuries as possible to the otherwise healthy leaves. In fields where the tobacco plants were quite small the infected leaves were picked directly into long, narrow baskets which could be dragged between the rows. Where the plants were larger pails were used for the collection of leaves. These containers, when filled with leaves, were carried to the ends of the fields and dumped in piles convenient for removal to the place of final destruction. Immediate destruction of the picked leaves was urged in order that they might not become dry and thus increase the danger of spread of infection by winds. The leaves were destroyed in some cases by burning; in others by burying or covering with a layer of earth.

In no case did the loss to the crop through picking amount to more than 15% of its total value. On the other hand, in no case where the picking was consistently done was any considerable spread of the disease reported during the remainder of the season. On a few farms where picking was performed by the farmers themselves and for some reason was not carefully done, considerable spread resulted during wet weather. While the prevailing dry weather during the growing season made exact estimates of the value of picking infected leaves impossible, it is certain that a decrease in the amount of infective material greatly lessened the chances for further spread.

This work was continued until the beginning of the tobacco harvest, or until the time when no further spread of the disease was probable. Extensive picking was done on eighteen farms, and satisfactory results were obtained in each case. This method of control will without doubt remain important in the campaign against the disease in succeeding seasons.

Effects of the Weather

The weather during the summer of 1922 was very unusual throughout the infected region. The tobacco season started with a series of rain, hail and wind storms which damaged the young tobacco considerably and caused a rapid spread of "Wildfire" in fields which had already been transplanted. There followed a short dry period during which most of the remaining tobacco fields were set with plants. Next came a series of heavy rains which prevented cultivation of tobacco ground for upwards of two weeks. The result was a stunting of the tobacco in many fields to such an extent that even a fair crop was despaired of. Then from the middle of July to the middle of September a hot, dry period ensued, during which late tobacco continued to grow very slowly.

The slow-growing plants in most cases of early infection showed few signs of the spread of the disease, with the exception of a slow spread from extreme lower leaves to those immediately above. These lower leaves were picked off or fell off after drying up, and consequently the great majority of infected fields suffered little or no loss. The few fields of early, fast-growing tobacco, on the other hand, showed a rapid spread of the disease soon after transplanting. In some cases it was necessary to pick from 10% to 20% of all the leaves on the plants in order to protect the healthy leaves from infections. This measure, aided by the following dry weather, insured a good crop even in the most heavily infected fields.

The final conditions of weather included freedom from frosts and sufficient rainfall during the latter part of September to bring even the late tobacco (including that which had been replanted) to a fair state of maturity. Considering the extremely irregular weather conditions, the tobacco crop in Dane county was surprisingly good.

The Outlook for Next Year

The manner in which the bacteria causing "Tobacco Wildfire" pass the winter is not known, although experiments are now being carried on at the Experiment Station to ascertain that fact. Consequently definite directions for preventing the development of the disease during the season of 1923 cannot be given. However, there are certain precautions which if carefully taken, are sure to prove of benefit. They are included in the regulations adopted by the State Department of Agriculture, and are, in brief, as follows: (1) Fall plowing of infected fields immediately after harvest to prevent new infections on suckers or spread of germs to other fields through the medium of wind-blown leaves. (2) Destruction or sterilization of seed-bed covers and frames on infected farms. (3) Use of seed grown outside of the infected area or seed specially treated to kill "Wildfire" germs. (4) Use of new, uncontaminated ground for seed-beds. (5) Burning of tobacco shed refuse instead of returning it to the fields. (6) Immediate destruction of seed-beds showing infections, and the substitution of healthy plants from some other source. If these regulations are carefully followed, it is practically certain that "Tobacco Wildfire" will to a great extent be eradicated from Wisconsin farms during the season of 1923.

The Lesson From Other States

In spite of the impression in Wisconsin that "Tobacco Wildfire" is not a dangerous disease, one should not be too sure that much greater damage may not be possible in succeeding years when weather conditions may be more favorable to its spread. Official reports from Connecticut, which has had a particularly rainy season during the summer of 1922, show that practically all tobacco fields were infected and that heavy losses were sustained by a large number of growers. Wisconsin is indeed lucky to have the disease localize on only 90 farms out of over 7,000 growers. The developments of next year can only be matters of conjecture, but every possible action will be taken by the State Department of Agriculture, assisted by the Agricultural Experiment Station, to eradicate this new tobacco pest. The hearty cooperation of all tobacco growers is needed to insure the accomplishment of this task.

BARBERRY ERADICATION REDUCES GRAIN RUST LOSSES

BY WILLIAM A. WALKER, *State Leader*

Of all work of the department, grain rust control, measured in dollars and cents, is the line from which the greatest financial benefit to farming interests may be expected.

Black stem rust is the world's most destructive disease of cereals. It attacks wheat, oats, barley, rye, and about fifty wild and cultivated grasses. In Wisconsin the principal damage is to oats and barley, in which the rust losses range from $800,000 to $5,000,000 per year. Even more serious injury is done to the spring wheat crop of the upper Mississippi valley and the total cost of black stem rust to the United States averages $70,000,000 per year.

We cannot continue to grow black rust and grain too. Either we must get rid of the rust or the rust will get rid of the grain.

The evidence that the common barberry is responsible for black rust epidemics is now conclusive. In addition to Denmark, whose experience in eradicating black rust by removing barberries in 1903, following eight serious epidemics in twenty years, is well known, the record of every other European country supports the same view. The common barberry has been taken out of all the agricultural districts of England, France, Germany, Spain, Italy, and Austria except in the neighborhood of such mountains as the Alps and the Pyrenees, and it is only near such mountains that any black rust can now be found. In Great Britain the rust is present only in the neighborhood of barberries which still occur in parts of Wales.

In the United States dozens of local farming communities have been mapped and the rust spread in spring studied. These all show heavily concentrated infections near barberry in late June, slight infections half a mile away, and none at all before the first of July at a distance from barberry. Such areas have been mapped and worked out in Wisconsin at Marshall, Black Earth, Glen Haven, Trempealeau, and Milton.

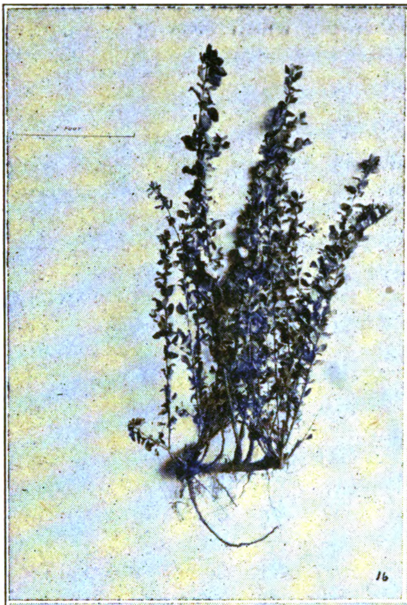
Several grain fields were studied where one or more barberry bushes were found near each field. In parts of the field nearest the barberry the rust infection was very heavy. As we got farther away from the bush the attack was less noticeable. In some cases barberry bushes near grain were not at first located, but were found later by studying the attack of rust on the different parts of the field; the heaviest infected section was always found to be nearest the bush.

Rust damage was light in 1922 due to favorable weather conditions, except in fields near barberry bushes. Attacks of rust were invariably found near barberries, some destroying the crop completely.

Until recently many have been alarmed at the possibility of rust spreading from the southern states independent of local northern conditions. Surveys of rust development in 1921 and 1922 showed such a northward distribution which could be definitely traced from Texas and Louisiana up the Mississippi valley. However, rust began to spread from the barberries of Iowa, Minnesota and Wisconsin two weeks in advance of its arrival from the south, and when the southern infection arrived it was too late to accomplish material damage.

Millions of Barberries Removed

The National Campaign, carried on in thirteen of the North Central States, including Montana, Colorado, Wyoming, North Dakota, South Dakota, Nebraska, Iowa, Minnesota, Wisconsin, Illinois, Indiana, Ohio and Michigan, begun in 1918, is now about to complete its fifth year. In 1921 and 1922 all efforts were concentrated on the farm-to-farm sur-



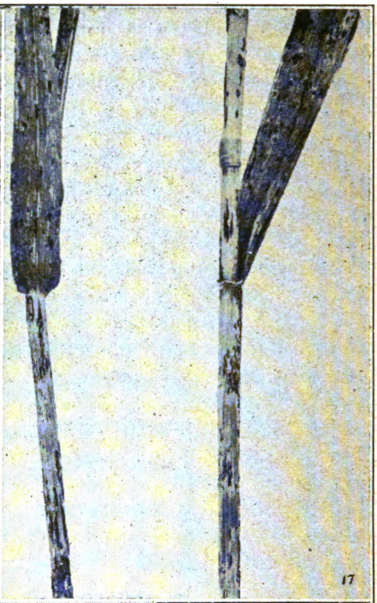


Fig. 16.—Sprouts from fragment of barberry root.
Fig. 17.—Barley stem showing black rust infection.
Fig. 18.—Woods infestation of barberry near Marshall, Wis.

vey, although a resurvey of cities and villages in the counties covered is being carried on at the same time.

During the four years from April 1, 1918, to December 31, 1921, almost all cities, towns and villages in the thirteen states of the eradication area were surveyed. A total of 5,619,971 bushes was located on 49,926 properties. A total of 4,443,826 bushes was removed from 45,584 properties. Of the 1,176,145 bushes remaining on 4,362 properties, about 1,000,000 are escaped bushes, most of which are not eighteen inches in height, on three large escaped areas in Wisconsin. Of the 5,619,971 bushes found in the entire area of the thirteen states, 3,352,124 have been located in Wisconsin, where they occur on 7,899 properties.

For the past two years the farm-to-farm survey has continued. Four counties had been finished in 1920 as shown in the last report; and these were followed by five more in 1921. The formation of the National Rust Prevention Conference composed of state farm bureaus, transportation and milling companies and others, gave a pronounced impetus to the work and the resulting increased federal appropriation hastened it.

As a result, on September 30, 1922, the survey of twenty-six of the counties in southern and western Wisconsin had been completed.

Numerous wild areas have been located so far in the campaign, some covering several square miles and containing a million or more bushes and seedlings. (See map on page 75.) Several wild areas have been found in the scouting this season. All have been found to spread from a planting in a nursery or near a farmhouse.

The limits of a wild area are discovered by scouting on foot and a map is made of the entire area for permanent record. The wild area is then scouted each year until the eradication is complete.

It is necessary to get out all of the small roots when digging out a barberry bush. A root left in the ground invariably sprouts the following year. The roots of the barberry are easily distinguished from other roots in that wherever it is cut or bruised it shows a bright yellow. In stony ground it is hard work and almost impossible to get out all of the roots. Dynamite has been resorted to in some cases, but has not been very successful, as many roots are torn off and covered and not found.

Considerable experimenting has been done with the application of chemicals to the barberry which has proven quite successful. Some large areas will be treated in this way this fall and it seems to be the most successful way of complete killing and also the cheapest. Both salt at the rate of ten pounds to the bush, and very dilute sodium arsenite solution, properly applied, have been found 100% efficient.

During the winter, publicity and educational work is given as much attention as possible. Ten thousand large posters and bulletins are to be mailed out this winter in this state by the Conference for the Prevention of Grain Rust which cooperates with the department. Railroads have asked for literature to distribute along their lines and have instructed their employes to acquaint themselves with the barberry bush to be able to give information at their respective stations. All agricultural and high schools are supplied with information in various ways showing the relation of the barberry to rust. A film giving the details of this work and the importance of barberry eradication is being shown to agricultural clubs and gatherings. The state leader also takes part in farmers' institutes in January and February and reaches many sections of the state in that way.

It will be necessary to continue the farm-to-farm survey in the remaining counties of the state, rescout all the cities and counties for sprouts, and resurvey all of the wild areas for sprouts and seedlings. The time required to finish this program will depend on the available funds, most of which are supplied by the U. S. Department of Agriculture. With the same appropriation the farm-to-farm survey should be finished in three seasons, after which follow-up work on a smaller scale will occupy several more.

APPLE FIREBLIGHT REDUCED IN DUNN COUNTY CAMPAIGN

By E. L. Chambers

Promising results have been secured during the past two years in a campaign to control fireblight on a rather large scale in Dunn county. This bacterial disease working within the tissues of the host cannot be reached by the best of sprays, and can only be controlled by the pruning knife and saw. Its development can be retarded only by cultural practice. Since the organism gains foothold and develops most readily in rank growth, such as a forced growth and water sprouts, and it is possible practically to eliminate these, the next problem is that of getting rid of the source of infection.

Description and Habits of the Disease

Varieties of apples vary greatly as to their susceptibility and resistance to this disease. The organism overwinters in "cankers" formed on the large branches and limbs of the more susceptible varieties, and scattered about by insects attracted to the bacterial ooze issuing from these cankers during the blossoming period.

The bacillus gains entrance through the nectaries, or directly through injuries or insect punctures. The overwintering cankers are formed at the point where the development of the blight ceases at the time the trees become dormant. The cankers are characterized by a distinct line of demarkation between the dead blighted area and the normal tissue. It is at this point where the organism finding sufficient moisture is able to winter over. There is usually a slight swelling of the tissue about the canker.

The Transcendent crabapple is a prolific producer of virulent cankers and is the chief source of our trouble in Wisconsin orchards. A few other varieties of crabapples as well as Yellow Transparent, Wolf River and McMahon apple, once infected, are a source of considerable trouble.

Methods of Control

Horticulturists in California and several other of our western apple and pear growing sections found a few years ago that where they had previously been growing the choicest of fruit, they were now unable to grow any kind of a crop. They set out to restore their industry by removing and destroying all of the diseased trees within a given area. As a reward for their efforts they are today again growing these same varieties of fruit with the fireblight under control.

There is an area well adapted for fruit growing located on high table land in the vicinity of Hatchville in Dunn county which affords an ideal air drainage as a protection against frosts. This section once produced choice apples with little effort, but being neglected, was allowed to be overrun with disease.

Since one of the trial orchards of the State Horticultural Society and a large commercial orchard of 130 acres have located in that section considerable interest has been aroused in the apple growing industry. At the request of several of the county agricultural agents in that vicinity, a dozen or more of the larger fruit growers and the State Horticultural Society, a fireblight clean-up campaign was undertaken during the spring of 1921.

Location and Method of Procedure

An area of thirty-six square miles was undertaken, extending three miles in each direction from Hatchville and including portions of Weston and Lucas townships in Dunn county, Spring Lake in Pierce county, and Cady township in St. Croix county.

The campaign was well started in the spring of 1921 and was reopened in the fall with a field meeting at the orchards of the Weston Orchard Company, located in the heart of this area. Here the purpose and methods of procedure were discussed. A circular letter was sent to each party concerned by the local county agricultural agent, together with a copy of the local newspaper carrying a write-up of the field meeting. The property owners were then visited in person and their orchards gone over with them, the susceptible varieties pointed out and promise of their cooperation secured. Each orchard owner was asked to remove and burn all of his Transcendent crab apple trees and other more susceptible varieties. The Weston Company had already given the project a good start at their orchard by the removal of their crabapple trees. Nurseries selling stock in this section were asked to cooperate by refusing to fill orders for these susceptible varieties and suggest resistant varieties as substitutes for the present.

A great deal of interest was taken in the campaign, and the usual amount of misunderstanding was met with, but of the 118 parties visited, all but nine have removed their Transcendent crabapple trees and the majority have pruned up their orchards considerably. The remaining nine have promised to attend to their orchards in the near future. There was no attempt to compel the farmers to remove their trees, the work being carried on voluntarily. The cooperation secured was remarkable.

Aside from the Weston Orchard Company with 130 acres of apple trees, these 118 properties have growing on them 3,401 trees, 928 of which are of the susceptible varieties, and 190 were crabapples, mostly of the Transcendent variety.

The Wealthy, a variety of apples best adapted commercially to Wisconsin, is quite susceptible to the blight; although fortunately, it does not show a tendency toward carrying the disease over as over-wintering cankers. It is because of the ease with which this valuable commercial variety takes the disease that the removal of such varieties as the Wolf River, Yellow Transparent, McMahon and the crabs on which it does winter over, are sometimes necessary.

The trees listed were distributed over the area as follows:

County	Township	Total	Susceptible varieties	Crabs
Dunn	Weston	1,125	321	54
Dunn	Lucas	1,267	322	93
St. Croix	Cady	524	172	23
Pierce	Spring Lake	485	113	20

Observations this fall showed that the fireblight was greatly reduced in the smaller orchards of this area. Dr. L. R. Jones, accompanying an inspection party through this section during the latter part of October noted very promising results in all of the orchards included in the proposed clean-up area, with the exception of a few where all of the old diseased trees had not yet been removed. Unfortunately, the Weston Orchard still continued to show quite a severe infestation of blight. It appears that this orchard still harbors within its borders centers of infection despite efforts toward their elimination; this is a phase of the problem which requires further study.

It remains to be seen whether in trees harboring infection, pruning can always be carried on effectively or whether badly infected trees must be entirely removed to accomplish the desired results. Our object, of course, is rather to control the disease than to eradicate it, a plan which has been carried out successfully in other states.

WHITE PINE BLISTER RUST

During the current year a decided decrease in number of new infection centers of blister rust, as compared with former years, was an outstanding feature. Only one of the six new spot infections found is of a serious nature. This is on the border of Dunn and Eau Claire counties, on Big Elk Creek, about seven miles west of Eau Claire. The center of infection comprises an area about ten rods wide and eighty rods long, in which approximately one hundred blister rust cankers on branches and stems of white pine were located. Surrounding this area is a tract of white pine and hardwood about two miles in length and from one-fourth to one-half mile in width along the creek.

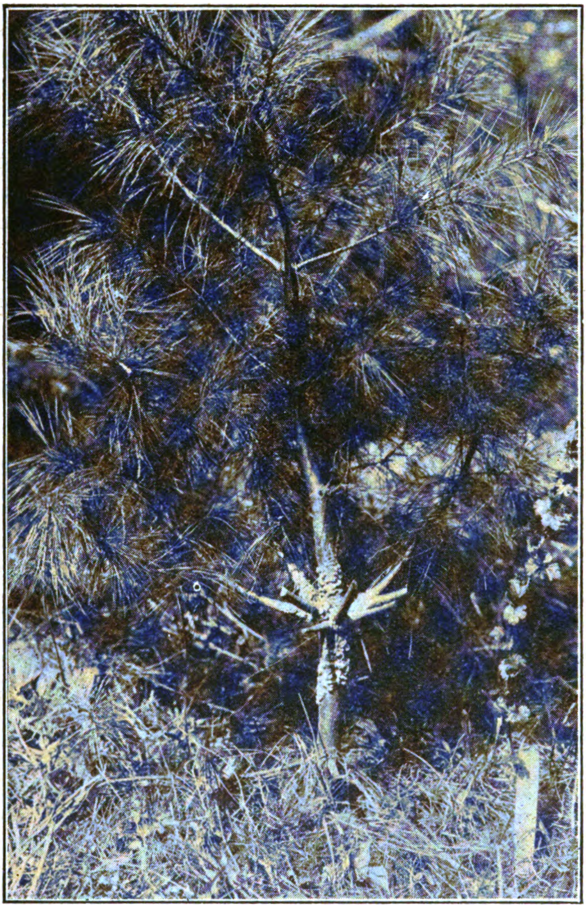


Fig. 19.—Young white pines with blister rust.

Federal Aid Plan

The federal plan of giving aid in blister rust control has been modified. At present the Bureau of Plant Industry provides funds only for educational and experimental work. The new plan does not interfere with the control work carried on by the state, but on the contrary it provides for better methods of informing the public that currant and gooseberry eradication will control the disease. Moreover, the plan provides for experimental work in order to find out the exact nature of the disease as it exists and the factors influential in the progress of the disease. It also serves to determine more thoroughly the requirements in control methods. During the past summer a cooperative crew under federal supervision has started an experimental plot covering a total of about 3,000 acres of young pine at Eau Galle, Dunn county, of which 975 acres were freed of gooseberry and currant bushes during the past season. As in other cooperative work, this experimental plot is under the control of the state authorities, but the cost of maintaining the crew, including a federal agent, is paid entirely from federal funds.

Publicity has been carried to the owners of pine through talks at farmers' institutes, personal interviews by scouts in the field, bulletins, newspaper articles, posters, moving pictures and exhibits at fairs and other public places. Among these methods of giving information, personal interviews are by far the most important.

Progress of Control Operations

Although white pine blister rust is strongly established in the northwestern part of the state, and there is practically no hope of exterminating this fungus, it is gratifying to know that our present control measures are decidedly effective. In Polk and Burnett counties, where the disease was found so abundantly in 1919, the number of gooseberry and currant bushes found infected in 1922 is comparatively small. The areas containing the chief white pine stands in these counties have been freed of gooseberry and currant bushes, reducing the danger of having such large infections to contend with in the future.

Conditions in St. Croix county have improved as the destruction of diseased pines near Deer Park has resulted in checking the spread of the disease. During 1921 the Ribes bushes were removed from the best stands of pine, but there is still a considerable amount of Ribes eradication work to be done in order to stop the progress of the disease in this locality.

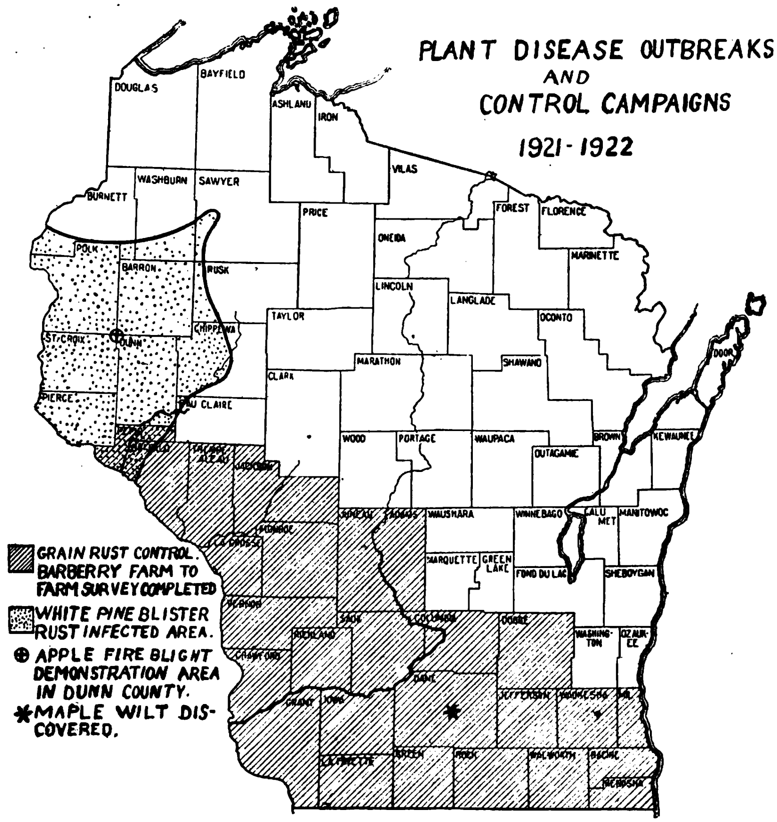
It was found that the disease at Reserve is not entirely eradicated. One white pine and a number of gooseberry and currant bushes were found to be infected about one-fourth of a mile east of the former control area, all of which is on the court Oreilles Reservation in Sawyer county and is under the supervision of federal authorities.

During the season of 1922, two trips were made to Shawano county, but no infections were found at Keshena (where control measures were formerly applied), nor in other parts of the county.

Another important part of the campaign was the location of a considerable number of farm woodlots containing white pine, especially in Dunn and Shawano counties, not formerly reported. It was also found that landowners are much more interested in their pine than was formerly supposed. On the whole, farmers and woodlot owners are anxious for assistance in protecting their holdings against blister rust and are more than willing to do their share of the work.

It is the plan for the next season to continue eradication of gooseberry and currant bushes in scattered localities on the cooperative basis with farmers in Polk, Burnett, and St. Croix counties.

Definite plans for cooperation with thirty farmers were made during 1922 to eradicate an extensive area along the border of Dunn and Barron counties in the vicinity of Prairie Farm, most of the work being scheduled for 1923. In this area infections on Ribes bushes were found in various places. One small pine in each of two places were also discovered. While none of the infection centers are very serious at present, it is time that preventive measures should be applied without delay, as the pine in the region is sufficiently abundant to justify the cost.



In the area seven miles west of Eau Claire the Ribes bushes from 120 acres have already been removed. Cooperation with farmers will be continued to effect thorough control in this locality. Infected pines will be eradicated during the winter of 1922-23, and inspection of white pines will be continued until the danger is eliminated.

The educational campaign, together with scouting for infection centers, will be continued as formerly. As during the past year, only two men are expected to be employed for this purpose in 1923 unless the disease becomes more serious.

The National Blister Rust Situation

Wisconsin is in a peculiarly fortunate condition, as blister rust does not seem to be spreading here faster than it can be controlled. This is in marked contrast with the situation in both New England and the Pacific Northwest, where the disease is already causing extreme losses. Infection is prevalent throughout all of the New England states, involving over 10% of the pine covering extensive tracts.

THE MAPLE WILT

REGINALD H. COLLEY[1]

A serious disease of the Norway maple caused by a fungus belonging to the genus *Verticillium* has been discovered in Wisconsin during the past summer. Comparatively little is known about the disease. Most of the field work on it has been done by Mr. G. F. Gravatt, of the Office of Forest Pathology, Bureau of Plant Industry, Washington, D. C. His investigations have shown that the disease has undoubtedly been present for some years in certain localities, particularly in the East; that it is widely distributed; that it is spreading; and that it attacks silver, sugar and sycamore maples, as well as the Norway. The severity of its attack on the Norway maple, hitherto one of our most dependable and resistant street trees, is now recognized. A few reports have reached Washington of the presence of the disease in Indiana, but this is the first case of it, so far as can be determined, in Wisconsin.

The most pronounced symptom of the disease is a sudden wilting of a branch or branches on what appears otherwise to be a perfectly healthy tree (Fig. 2). The fungus, growing rapidly through the sap wood, apparently interferes with the sap circulation. The sapwood of the lower part of the wilted branch will be found to be colored green. The green color becomes darker as soon as the newly cut surface is exposed to the air, and turns brown as the wood dries. In addition to these wilting and color symptoms there are sometimes present slimy areas on the bark of the trunk or infected branches, or, instead of slimy areas, simply small, dark, moist spots in the bark. The bark frequently dries up and falls from such spots.

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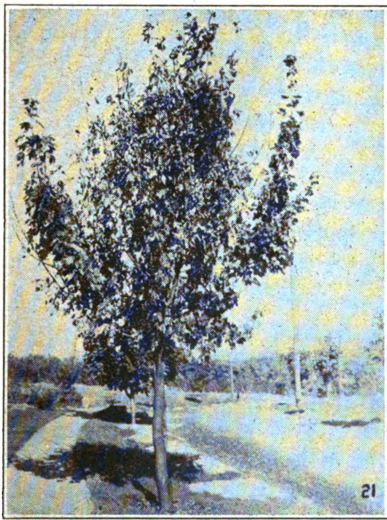
[1] Pathologist, Office of Forest Pathology, U. S. Bureau of Plant Industry, Madison, Wisconsin.

Mr. Gravatt writes that "the size or vigor of the tree seems to have no retarding effect on the rapidity of development of the wilt. A number of large, vigorously growing Norway maples have been completely killed within three years after the first limb died. . . . Small trees have been killed by the wilt the first year after being planted. So far every tree we observed as infected last year was either dead this year or much more severely infected." The seriousness of the disease is therefore definitely established.

The unhealthy condition of a Norway maple (Fig. 1) in a street planting at Nakoma, a suburb of Madison, was called to the writer's attention in September of this year by owners of abutting property. A few days later a branch on the tree next to the one first observed suddenly wilted. (Fig. 2.) Specimens from tree number one, sent to Washington on September 30, were positively identified as maple wilt. By October 10 the wilted branch on tree number two had become dry and brown, although all the other branches on the tree were still green. Both trees were grubbed out on October 21. Sections of the trees showed that the characteristic green discoloration extended up into the bases of the main branches, down the trunk, and into the main roots in both cases. The discoloration was much more pronounced in tree number one than in number two, as might have been expected from the appearance of the trees. The condition of number two, however, indicated infection all through the trunk severe enough to cause the death of the tree next spring or early summer.



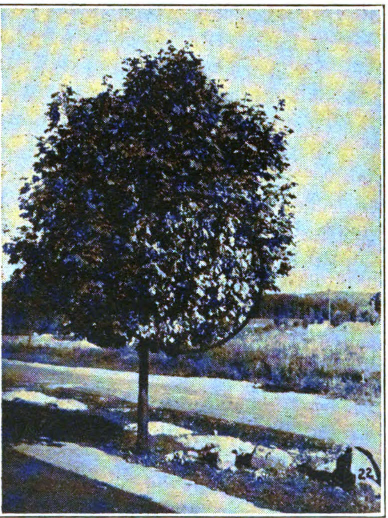


Fig. 21.—Maple wilt. A Norway maple in a street planting at Nakoma, Madison, Wis. Only a few branches were green when the photo was taken on Oct. 10, all the others being dry and dead from this disease.

Fig. 22.—A Norway maple, adjacent to the one shown in Fig. 21. Photo taken Oct. 10th. The branch within the circle wilted suddenly. The trunk of the tree was found to be thoroughly infected with "maple wilt."

The source of the infection of these two trees seems to have been a small Norway maple which had been set as a replacement tree almost directly across the road. It had died soon after transplanting. The wood of its trunk showed the characteristic dark brown discoloration left by the disease in dead dry wood.

Mr. Gravatt's inoculation experiments have proved that the wilt can gain entrance to a tree through wounds which expose the sapwood, and wounds may be the most important avenues of infection. Assuming this to be the case it is certain that the disease can be easily spread by insects and pruning tools. Pruning small trees appears to be useless. They should be dug up and burned. Larger trees, however, have a high value in any community and it is natural to attempt to save them. If such trees become infected they must be very carefully inspected at frequent intervals and all dead or dying branches removed. The real difficulty with this method is that the disease appears to be thoroughly established in the trunk of the tree before the death of a branch denotes its presence. This was the case with tree number two (Fig. 2). No amount of pruning could have removed the infected parts of this tree. There are certain general principles which should be followed in case pruning is attempted. All wounds should be painted immediately with shellac followed by a mixture of creosote and coal tar. This procedure will close the wound as a point of entrance for the fungus. All pruning tools used on an infected tree should be sterilized by washing in a solution of one part of bichloride of mercury in one thousand parts of water, and then rinsing in clear water. All debris, branches, leaves and chips should be burned.

The outlook for an easy method of control for this disease is not promising. The immediate removal of all infected trees is at one and the same time the most drastic and probably the most effective control measure. There is every indication that the disease can be widely distributed on nursery stock. Careful and thorough inspection of all plantings of Norway maple, particularly of young trees, must be made, in order to catch infections as soon as possible. In experimental work and infection surveys now being conducted by the federal Office of Forest Pathology, enough has been learned to show that maple-wilt is one of the most destructive shade tree diseases known.

INSECTICIDE AND FUNGICIDE INSPECTION

This work is carried on in cooperation with the division of chemistry which makes the necessary analyses. In addition to the products listed on page— several samples of standard insecticides, such as Paris green and lead arsenate, were analyzed on request when adulteration was suspected. In such cases the material was found up to standard and no prosecutions were undertaken.

Tourists Carry Uninspected Trees

An incidental feature of the recent tremendous development of tourist traffic has been an apparent attempt to transplant Wisconsin's woods into Milwaukee, Chicago, and St. Paul. In 1920 southbound autos in July and August were observed in numbers carrying evergreen and deciduous trees carefully "balled and burlapped." This number was multiplied many fold the following season and threatened to become a serious matter.

While feeling, entirely in sympathy with the nature-loving spirit this represented, the presence of white pine blister rust and several other serious pests and diseases in these regions made such traffic a serious menace to parks and private plantings at the points of destination. Several cases of the taking up of young white pines within the limits of blister rust outbreaks were observed.

Upon the discovery of these facts the conservation commission became interested as some of the trees were coming from state lands held for natural reforestation and others were being deliberately stolen from farm woodlots. Apparently tourists do not consider trees and plants private property. A few cases might have been negligible, but within a period of three years this activity had developed to a point where there was a continual procession of cars bearing young trees every day for weeks on each of a dozen main state highways.

For the season of 1922, two control measures were adopted. A large colored poster was printed quoting the essential sentences of the state nursery inspection law and explaining the danger of such general transportation of living plant material. By special arrangement with the conservation commission, all game wardens, forest managers, and fish hatchery employes were made special deputy state entomologists to assist in the enforcement of these regulations.

The work resulted in an immediate improvement, although complete success could not be expected the first season. The posters, displayed in hotels, post offices, and railway stations and tacked on trees at public camp sites, deterred many from attempting to carry shrubbery, and many others were interested. Full reports of the latter cases are not yet at hand, but several wardens have reported an average of twenty cars apiece stopped during August and September and trees destroyed.

Little opposition was experienced as soon as the regulations were explained to tourists, but one irate Chicagoan visited the Madison office and expressed himself with more vigor than courtesy.

In addition to protecting other regions against the white pine blister rust, the pine tussock, and similar troubles, the increasing tendency to dig young trees wherever found was a form of inexcusable vandalism which was growing to an alarming extent. If necessary local and highway police officers can be enlisted in addition to conservation wardens and nursery inspectors, but it is not believed future developments will necessitate this step.

Nursery Inspection

With the rejuvenation of small fruit growing, observable during the past three years, the number of nurseries has rapidly increased. In 1921 a total of 264 applied for inspection of whom 251 were granted certificates. Of this number 54 were conditioned on certain control measures being applied for pests at the transplanting time.

In 1922 the number increased to 309 inspections of whom 296 were granted certificates. Several additional will be issued after compliance with special orders such as the destruction of infected material.

Apple crown gall and poplar weevil remain the most common causes of condemnation of trees. Recently elm canker has been almost equally destructive. The latter varies with seasonal conditions, only 62 trees in 4 nurseries in 1921 being followed by 954 trees in 20 nurseries in 1922. A few cases of introduced San Jose scale were discovered and the infested material destroyed.

Among small fruit pests, crown gall in blackberries, false blossom in cranberries, and strawberry crown borer, were the only pests causing a definite refusal to permit sale. Treatment of all strawberry plants is required whenever strawberry root lice are found on the premises.

Pest Reporting Service

A staff of voluntary reporters who send in weekly statements of the insect pests and plant diseases troublesome in their neighborhoods, was organized in 1920 and has proven a most valuable source of information. The plan in Wisconsin was followed the next season by the adoption of a national organization along similar lines, of which the service in the state immediately became a part.

Reports received from week to week showed that 1921 was a year of serious insect outbreaks, while in 1922 there was an unusually small amount of trouble from such sources. Common pests, such as potato and cucumber beetles, codling moth, plum curculio and grasshoppers, were so numerous in 1921 that potato growers in particular were driven to desperation. The grasshopper outbreak was accentuated by a severe drouth, such that in some cases grainfields were saved from destruction only by the application of poisoned bran, while in other cases the promised yield was so small that grasshopper control scarcely paid.

The only outstanding insect outbreaks of 1922 were in forest trees. An unusual species of tussock moth (*Olene leucophaea* A. & S.) appeared in abundance in a large jack pine area of Burnett county completely defoliating the trees on thirty to forty thousand acres. The last previous outbreak of this species occurred in 1907-8, and was as sudden and brief as the present one.

This moth was all but wiped out in July, 1922, by the parasites *Chalcis ovata* Say,* *Itoplectis conquisitor*** Say, and *Theronia fulvescens* Cress.** One or more diseases aided in this result and it is believed that no further depredations need be feared for a number of years.

The other two forest insect outbreaks of interest were those of the fall webworm *(Hyphantria cunea)* and the birch leaf skeletonizer *(Bucculatrix canadensisella)*. The former defoliated walnut and other valuable trees to an alarming extent along the shores of Lake Pepin, an injury which may result in the death of many of them. The latter attacked birch generally in the northeastern counties late in the fall, causing some serious damage. It is said never to have been noticed in that section before.

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* Determined by Mr. S. O. Rohwer.

** Determined by Mr. R. A. Cushman; in both cases through the courtesy of D. L. O. Howard, Chief, Bureau of Entomology, U. S. D. A.

PAPERS FROM THE DIVISION OF ENTOMOLOGY 1921-1922

By C. D. Adams

Grading and Marketing Wisconsin Honey. Wisconsin Department of Markets Bulletin. Vol. 3, No. 4, 19 pp., September, 1922.

By E. L. Chambers

The Insect Page. Wisconsin Horticulture, Vol. 12. February to December, inclusive, 1922.

The Weston Fire Blight Control Project. Annual Report of the Wisconsin State Horticultural Society. Vol. 52, pp. 47-52, July, 1922. Also appeared in Wisconsin Farmer, August, 1922.

By S. B. Fracker

A Volunteer Pest Reporting Service. Journal of Economic Entomology, Vol. 14, No. 1, pp. 48-53, February, 1921.

Stopping the Distribution of American Foulbrood at its Source. Journal of Economic Entomology. Vol. 14, No. 1, pp. 117-121. February, 1921.

Report of the Division of Insect and Plant Disease Control. Wisconsin Department of Agriculture Bulletin 33, pp. 104-163. April, 1921. This report also contains papers by H. K. Harley, L. K. Jones, J. G. Dickson and E. E. Hubert and C. J. Humphrey.

Dusting to Control Fruit Insects. Annual Report of Wisconsin State Horticultural Society. Vol. 51, pp. 95-97. July, 1921.

Truck Crop Insects of 1920. Ibid. pp. 191-198.

Compulsory Honey Grading. Gleaning in Bee Culture. Vol. 49, No. 7, pp. 422-424. July, 1921.

Control of American Foulbrood; how Wisconsin is eradicating the disease by the area clean-up method. American Bee Journal. Vol. 62, No. 2, pp. 51-53. February, 1922.

Factors Affecting the Success of American Foulbrood Campaigns. Journal of Economic Entomology. Vol. 15, No. 2, pp. 138-143. April, 1922.

Don't Make It at Home. One of Two Evils. Both in Wisconsin Horticulture. Vol. 12, No. 10, pp. 151, 159. June, 1922.

The New Pest Reporting Service. Annual Report of the Wisconsin State Horticultural Society. Vol. 52, pp. 41-46. July, 1922.

The Bee-Tight Honey House. Gleanings in Bee Culture. Vol. 50, No. 8, pp. 511-513. August, 1922.

Treatment or Destruction. Gleanings in Bee Culture. Vol. 50, No. 8, p. 520. August, 1922.

A Fake Fireblight Cure. Wisconsin Horticulture. Vol. 12, No. 12, p. 185. August, 1922.

By S. B. Fracker and R. E. Vaughan

Insect and Plant Disease Control. Wisconsin Department of Agriculture Bulletin 36, 8 pp. March, 1921; and March, 1922 (revised).

FEED AND FERTILIZER INSPECTION DIVISION

(Including the inspection of feeds, fertilizers, agricultural limes, soil inoculants, insecticides and fungicides*).

W. H. STROWD, *Director*

The aggressive campaign against all forms of misrepresentation in the sale of feeds and fertilizers which was inaugurated when the work was taken over by the state department has resulted in an increased respect for the law. During the past biennium the relatively low prices for farm products has brought about a demand for low priced feed. Consequently, the temptation to adulterate has proved as great as in times of high prices, but intentional violations have been relatively very small. Another general attempt was made by a certain manufacturer to make sales of unlabeled oat feed, but prompt action by the department prevented this. In checking these practices several methods were used. Conferences were had with jobbers who sold the product in good faith, and who, when they learned the facts, agreed to refrain from patronizing the manufacturer; action was taken against a seller who made a deliberate misstatement of the facts; two car loads of feed which were shipped in by an out-of-state jobber, who could not be reached by state statutes, were seized under the federal statutes and warning was sent to every dealer in the state against patronizing the firm. As a final step it was ruled that in view of the fraud attempted only *manufacturers* of oat feed would be licensed; that jobbers would not be granted licenses although they could patronize licensed manufacturers.

In this way the matter was protected at its source since each manufacturer licensed was required to fill out a special form, certifying under oath that he would comply with the state statutes in every respect. The result has been that not a single unlabeled shipment was found since January 1, 1922. This division believes that oat feed, at a fair price, has its legitimate place, but the sale of the unlabeled product at double its market and feeding value through false claims, as this division has often found to be the case, will be fought by every available means.

Inspection and Analyses of Feeds

The use of an inspector for full time together with a small provision of analytical help has resulted in increased work in all lines. The provision for analytical help is still inadequate and an increase is necessary in order to provide a prompter service in analytical work as well as to provide for cooperation with other control chemists in studying and improving methods. The value of our work is, in a large measure, dependent upon the accuracy of our methods. The burden of maintaining and improving the accuracy of these methods rests upon all the states and Wisconsin must do her share. Owing to the inadequacy of our force we have not been in a position to do our full part. This should not be the case.

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* Inspection of insecticides and fungicides in cooperation with Division of Entomology.

For the most part the samples analyzed met their claims. Only a very few deliberately violated the law and such deficiencies as were found were largely due to a lack of chemical control or failure to recognize the natural variation in feeding stuffs. Manufacturers and dealers on the whole have shown a splendid spirit of cooperation.

The work done on standards for wheat mill feeds is by far the most important single piece of work ever done by this division. It has resulted in the establishment of standards which many millers fought at first, but which they now admit are fair and will eventually prove of benefit to the industry. The writer presented figures in Hoard's Dairyman for February, 1922, that Wisconsin farmers had been defrauded out of $100,000.00 in a single year through adulteration of wheat feeds. The division was unable to check this without standards and it was the purpose of the investigation to remedy this situation. A report of this investigation is given in this report. The standards have been in force for the past year and most of the opposition to them has died down. Most millers have modified their processes when necessary and a splendid beginning has been made.

Wheat Mill Feed Standards

For many years, but especially during the period of the war-time milling rules, many complaints have been received by various control laboratories regarding the quality of the different kinds of middlings and red dog flour. The chief complaint has been against the sale of reground bran for middlings, although there have also been complaints that feed sold for flour middlings was standard middlings, and so-called red dog flour was really flour middlings. Some of the complaints were unjustified while others certainly seemed to be warranted. Where disputes between millers, jobbers and dealers were submitted to feed control officials for arbitration or when the question of allowing a certain feed to be sold under a certain term, some officials feel that the present definitions are unsatisfactory, although they undoubtedly represent the best combined thought and effort of the best informed men among the feed control officials and the milling industry. At first thought it would seem that the thing to do is to adopt chemical standards for the several mill feeds. This matter had been up before the National Association of Feed Control Officials on previous occasions and had been fought largely on three grounds: 1. That the composition of wheat varies, depending upon the season and climate prevailing where it was grown. 2. That the primary business of the wheat miller is to make flour and, therefore, the manufacture of the offal cannot be controlled. 3. That the variation in composition of the various products is so slight that blanket standards are impossible.

It was recognized that there were some justifications for each of these objections and care had to be taken not to impose standards which were impracticable. On the other hand, the definitions then in force did not prevent abuses and a large measure of dissatisfaction among buyers. It was believed that if some reasonable standard or standards could be promulgated they would meet the approval of the majority of the millers, dealers and consumers, especially the former since they are undoubtedly the recipients of some unjust criticism and it is to their interest to remedy such abuses as exist.

As a member of the committee to consider the advisability of establishing standards the writer undertook a study of the composition and manufacture of mill feeds with special reference to Minnesota and Wisconsin mills. The study was roughly divided into two parts: 1. An inspection of the mills. 2. A study of the analyses made in the Wisconsin feed inspection laboratory for the past thirteen years. The inspections of the mills were made by Mr. D. R. Mihills and by the writer.

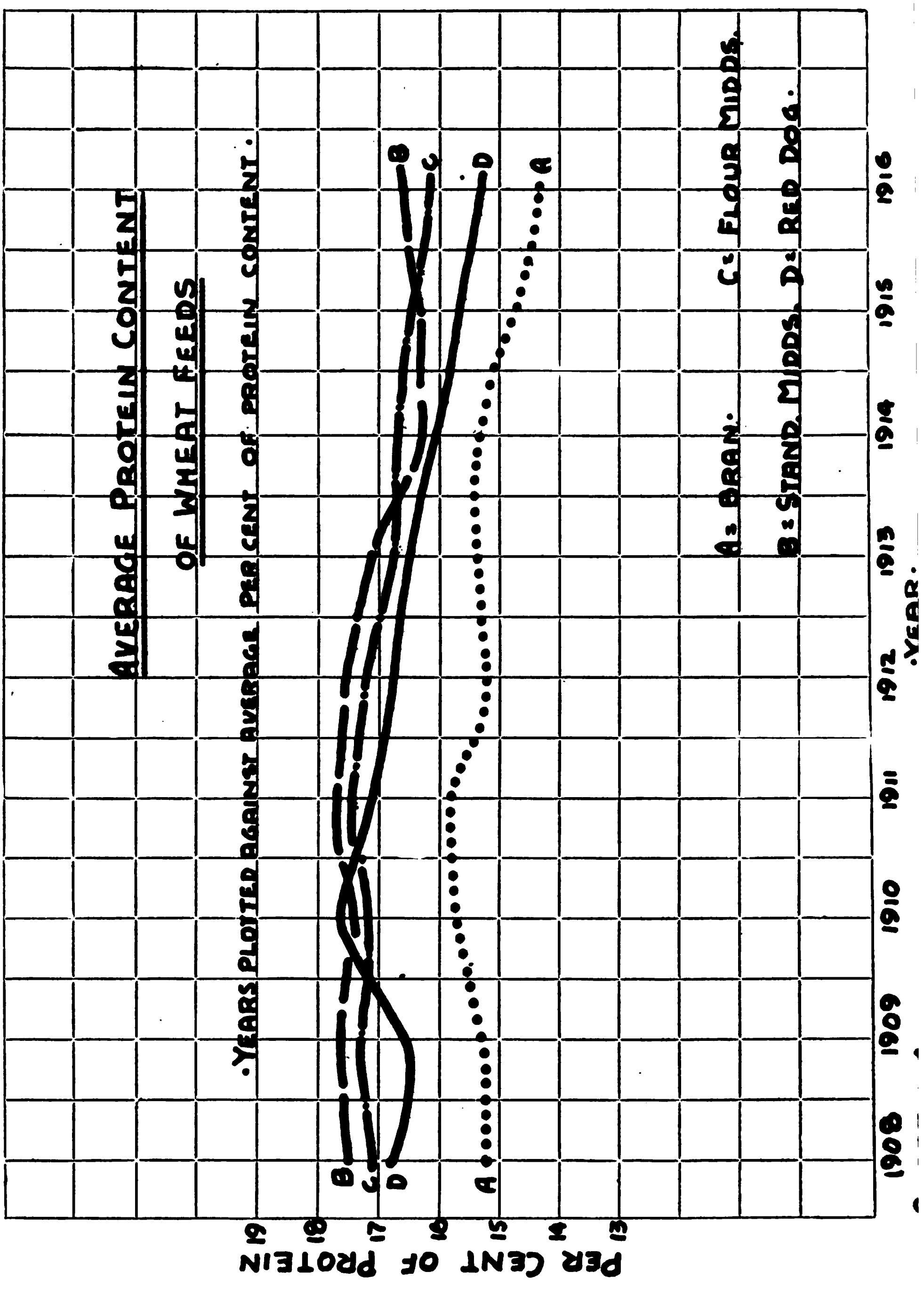
The milling processes of several different sized mills were studied and samples of the various fractions collected and some of them analyzed. Much interesting information was obtained, although it was not as complete as had been hoped for. Most of the millers said they could not give the proportions of fine bran, germ, or "fibrous offal from the tail of the mill" that should be in standard middlings. Some millers, however, claimed that bona fide standard middlings did not necessarily contain any germ at all. Furthermore, it was claimed that the proportions of red dog and standard middlings obtained in the usual process of milling were different for each mill. Therefore, since flour middlings is the mill run of standard middlings and red dog flour, the flour middlings from each mill was different.

Regarding the regrinding of bran, two mills were found which were known to have bran grinders. In some other mills visited the presence of grinders was suspected. At the time the mills were inspected they were not grinding bran as the price differential between bran and middlings did not justify it. One miller stated that the cost of grinding was around $4.00 per ton and they, of course, ground only when it was profitable. In other words, the more a farmer paid for his middlings the lower their quality. The reason advanced by this manufacturer for the installation of his grinder was that he had to meet competition; that mills with the proper machinery could put out pure ground bran as middlings by the "usual process of milling" while with others it was impossible. Whether this be true or not another miller who claims he doesn't use bran grinders stated that the proportion of bran and middlings put out depended upon the market price. While, of course, the miller should not be blamed for getting the best price possible for his product and for following the law of supply and demand, on the other hand, should anyone be allowed to sell ground bran for standard middlings on account of the difference in price? Why does a farmer buy middlings at a big increase in price over bran? Partly on account of fineness but more especially because he wants a less fibrous and more starchy feed for his pigs and calves. Therefore, ground bran satisfies only to a small degree the difference in quality which the feeder pays a big premium for. Again, the farmer often pays a large premium for flour middlings over standard middlings, and similarly for red dog over flour middlings. Here we have the fineness proposition entirely eliminated. It is solely a question of high starch and low fiber for which he pays. And yet one often finds samples of middlings which contain more fiber than bran, so-called flour middlings with more fiber than average standard middlings, and red dog with more fiber than flour middlings. This is by far the exception rather than the rule, but as I believe we shall see later it is not the natural variation in the product nor the necessity for close milling by large mills. Since, as already pointed out, the main difference in the mill feeds is starch and fiber it was believed, if satisfactory fiber standards (which indirectly indicates the amount of starch) could be adopted, they would amply protect the purchaser and at the same time prove least onerous to the miller. The question of the germ comes in between bran and standard middlings, but not between the others. If there were a fiber standard this proposition would take care of itself.

A study of the Wisconsin analyses shows that while there is some difference between protein content of bran and standard middlings, the average protein content of standard middlings, flour middlings and red dog run very close together. This is graphically shown in Chart I and A, where the average protein and fat contents of the several feeds is plotted against the years the analyses were made. In Chart 2 the average fiber content of the several mill feeds is plotted against the year in which they were made. This includes the average of all feeds with and without screenings analyzed in the Wisconsin laboratory during the years mentioned. Practically all these feeds were made in Minnesota and Wisconsin. A few were from Iowa and the Dakotas. Scattering samples, perhaps less than 1 per cent, from Kansas and Montana, were not included since these are outside the province of this report. In making up these averages the feeds were classified according to the way they were branded. This chart shows that there is a very distinct difference throughout between the average fiber content of bran, standard middlings, flour middlings and red dog.

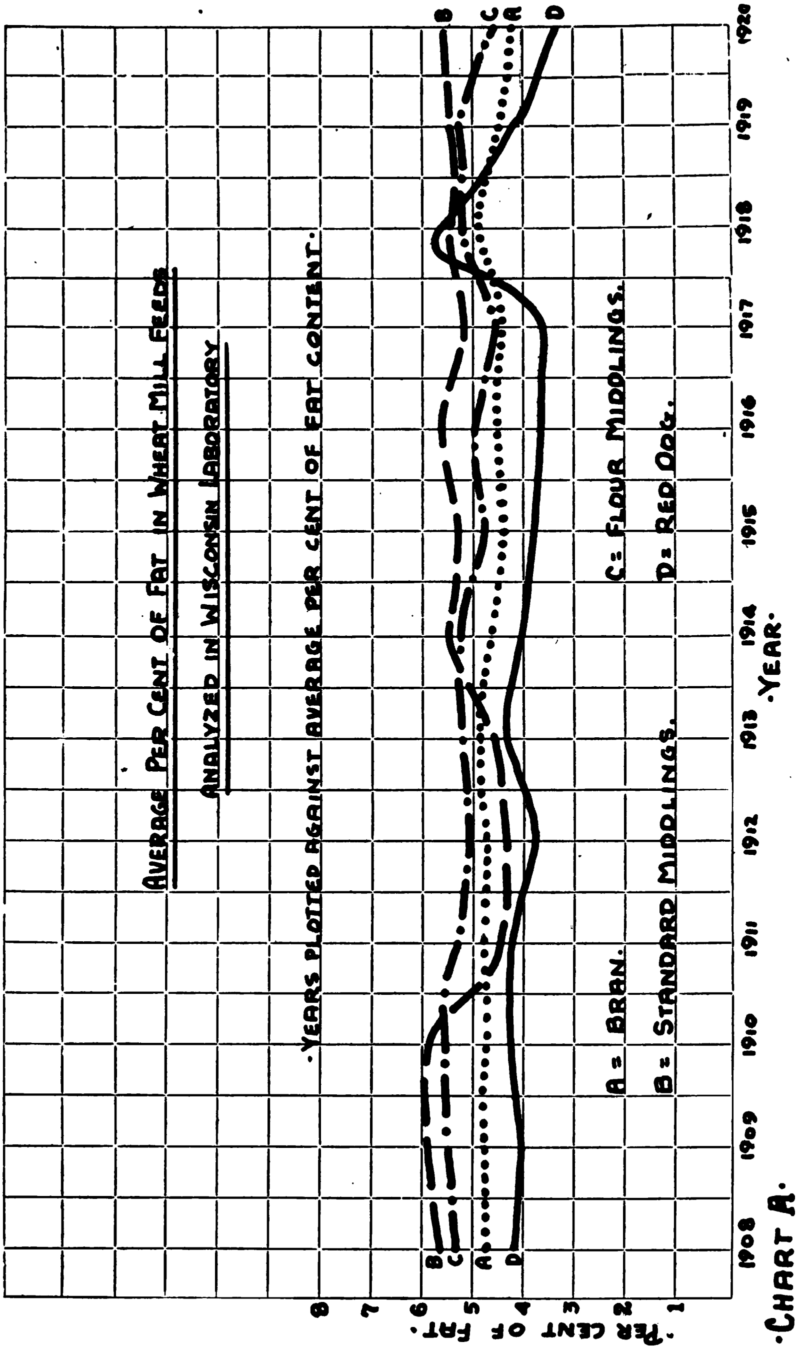
There is a surprising uniformity in the average analyses. For the ten years prior to 1917 when the war-time milling rules went into effect the average analysis of all bran was practically within experimental error of the fiber determination. Of course, individual samples varied widely but this point is brought out to show that the year to year variation in wheat products is not as great as has been supposed.

The average analyses of the several grades of middlings and red dog is also quite uniform up to 1917. The fiber content of red dog flour (?) for 1918 is interesting. Eight samples of seven brands were



AVERAGE PROTEIN CONTENT OF WHEAT FEEDS

·YEARS PLOTTED AGAINST AVERAGE PER CENT OF PROTEIN CONTENT·


Average Per Cent of Fat in Wheat Mill Feeds
Analyzed in Wisconsin Laboratory
·Years plotted against average per cent of fat content·
A = Bran.
B = Standard Middlings.
C = Flour Middlings.
D = Red Dog.
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
·Year·
8
7
6
5
4
3
2
1
·Per cent of fat·
A
B
C
D

·Chart A·

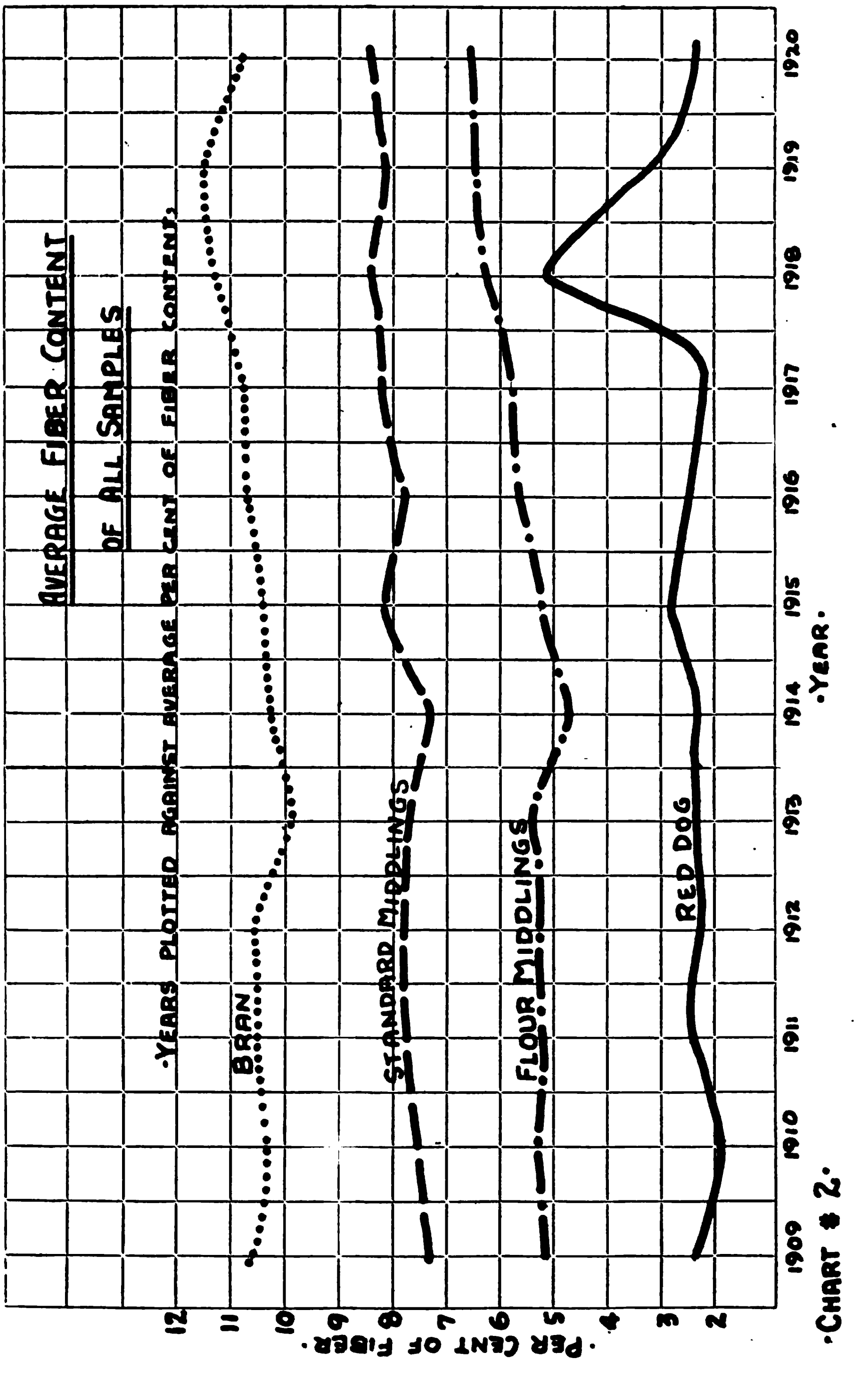
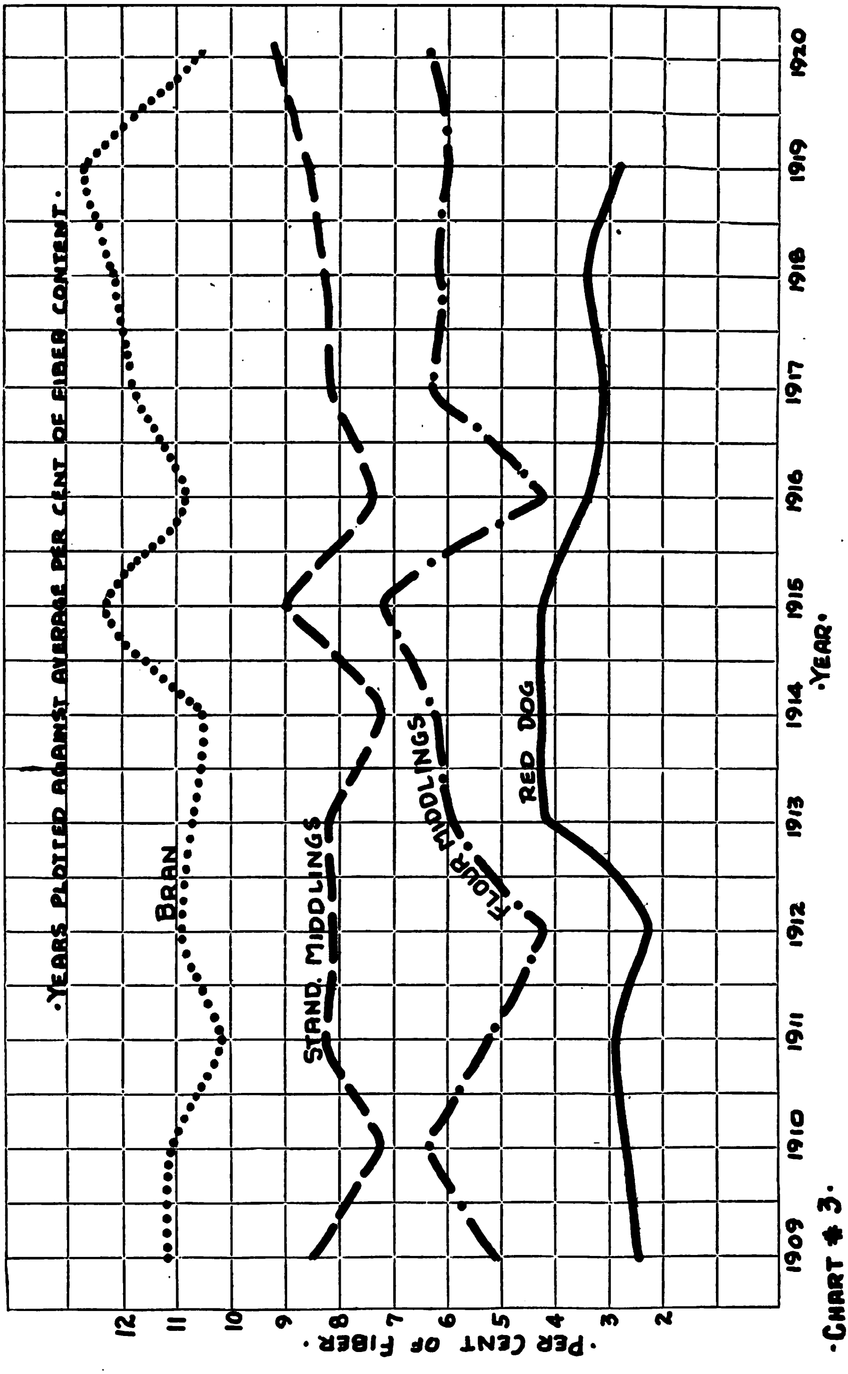

AVERAGE FIBER CONTENT
OF ALL SAMPLES
YEARS PLOTTED AGAINST AVERAGE PER CENT OF FIBER CONTENT
BRAN
STANDARD MIDDLINGS
FLOUR MIDDLINGS
RED DOG
12
11
10
9
8
7
6
5
4
3
2
PER CENT OF FIBER
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
YEAR

CHART # 2.

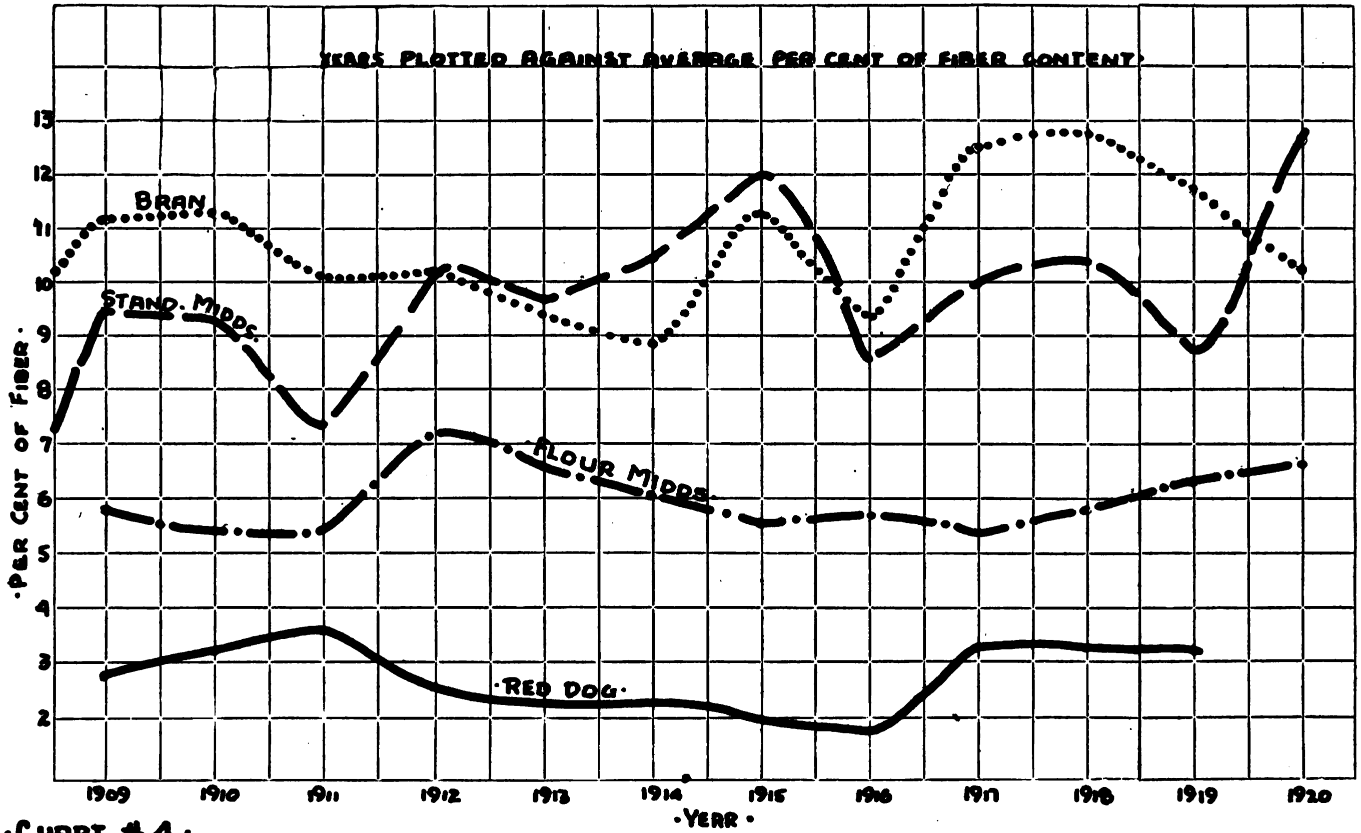
collected. Two samples were red dog flour, while the others were simply total or flour middlings. The average fiber content of so-called red dog in 1918 was only 0.5 per cent less than the thirteen year average for flour middlings, and was twice as high as the thirteen year average for red dog.

Chart 3 shows the variation in fiber content of the several feeds from a large Minneapolis mill over a period of thirteen years. There is a greater variation in the fiber content for the wheat feeds from the one mill than from all the mills. However, it is seen in this chart that there is a distinct difference between the fiber content of bran and standard middlings throughout the period. The difference between the other feeds is not so well defined although there is a wide average differential. One can hardly conceive, however, of this variation being beyond control. Let us compare the bran and middlings record of this mill with two other large Minneapolis mills shown in Charts 4 and 5. The curves of bran and middlings intersect in three different places in Chart 4 and the difference between the average bran and middlings content of the thirteen years is only .35 per cent, while in Chart 3 the difference is 3.02 per cent; for all analyses the difference is 2.76 per cent, and in Chart 5 the difference is 1.59 per cent. The curves in Chart 6 give the record of another Minneapolis mill, Charts 7 and 8, the records of Wisconsin mills, and Chart 8 of a Minnesota mill outside Minneapolis. The mill whose record is shown in Chart 9 is a mill which had a bran grinder. This grinder was installed in 1917 as the standard middlings curve indicates. As already stated, the miller contended that this grinder was necessary in order that he might compete with the other mills. A comparison of the fiber content of his middlings with that of the other mills, and the general average showed that he spoke truthfully. Should this miller be prosecuted because he meets competition and when he hands out the same product from the feeders standpoint as they who produce their feed "by the usual process of milling"?

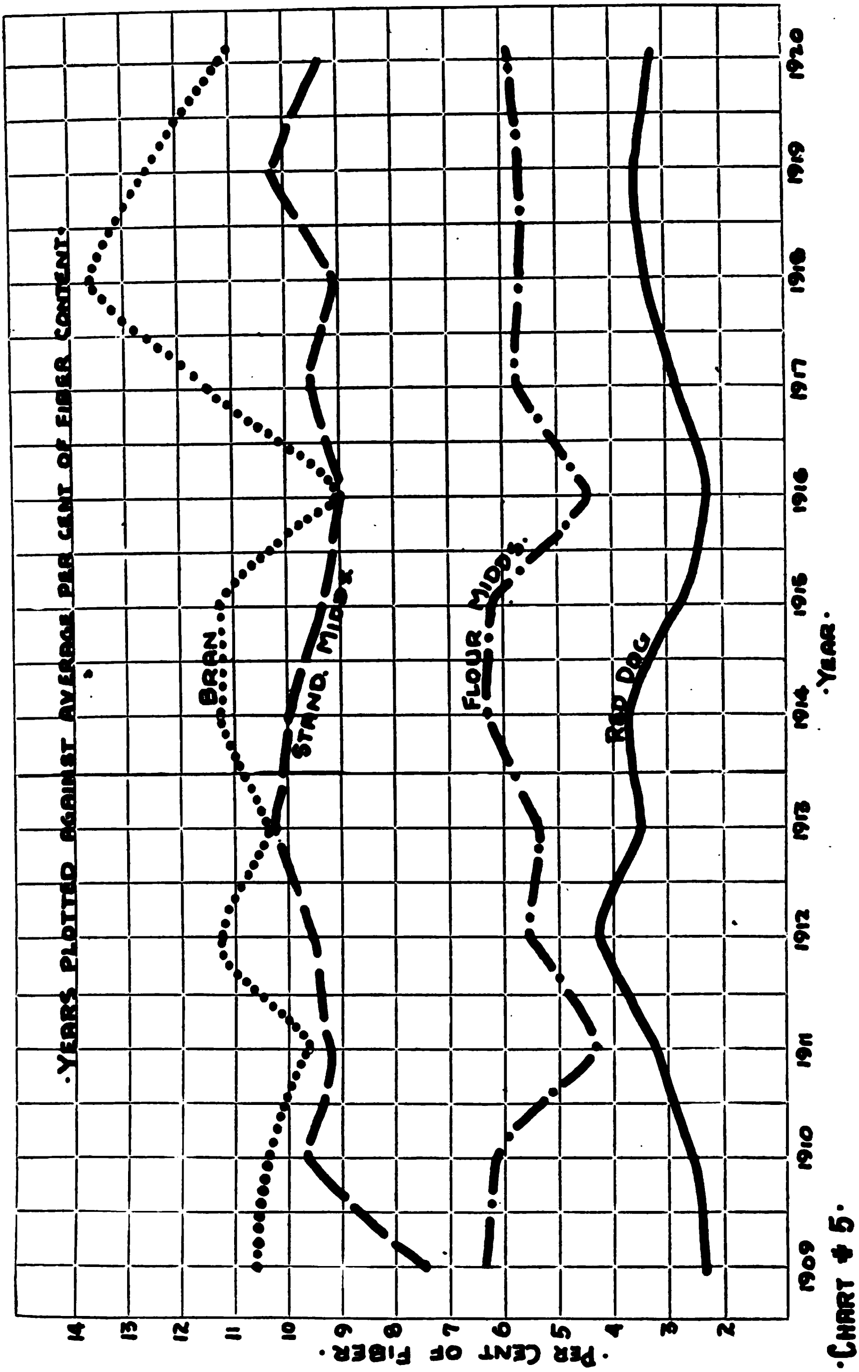
At a first glance the variation of the analysis might make the adoption of fiber standards appear impracticable. Let us, however, for the sake of argument, assume some arbitrary standards. Let us say, 9 per cent for standard middlings, 6.5 per cent for flour middlings and 4 per cent for red dog. With reference to standard middlings the mill in Chart 3 would have correctly labeled its standard middlings twelve out of thirteen years. Chart 5 would have had bran middlings for the past eleven years, and Chart 4 would have had bran middlings the past eight out of ten years. Chart 6 could have called their product standard middlings ten out of thirteen years. Chart 7 would have bran middlings only once. Chart 9 would have complied with the law each year. Chart 8 is equally divided. This firm is known for its lack of uniformity. With flour middlings at 6.5 per cent, Charts 3, 4 and 6 are O. K. twelve out of thirteen times, Charts 5 and 9 are O. K. each time, Chart 7 is off two times and Chart 8 is again off five out of eleven times. With red dog at 4 per cent, Charts 3 and 7 would be off twice, Charts 5 and 8 once each, while Charts


·YEARS PLOTTED AGAINST AVERAGE PER CENT OF FIBER CONTENT·
BRAN
STAND. MIDDLINGS
FLOUR MIDDLINGS
RED DOG
·PER CENT OF FIBER·
12
11
10
9
8
7
6
5
4
3
2
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
·YEAR·

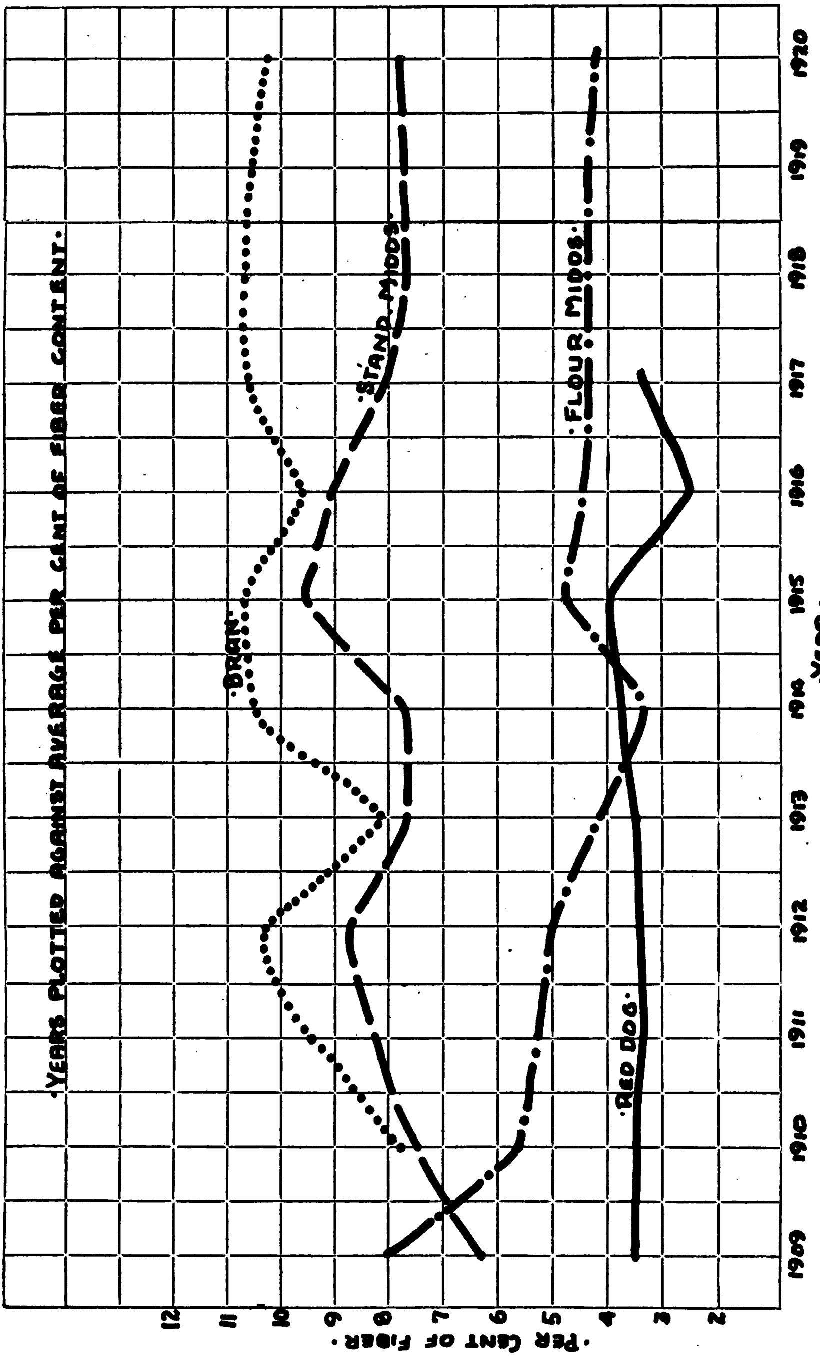
·CHART # 3·


YEARS PLOTTED AGAINST AVERAGE PER CENT OF FIBER CONTENT.
BRAN
STAND. MIDDS.
FLOUR MIDDS.
·RED DOG·
·PER CENT OF FIBER·
13
12
11
10
9
8
7
6
5
4
3
2
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
·YEAR·

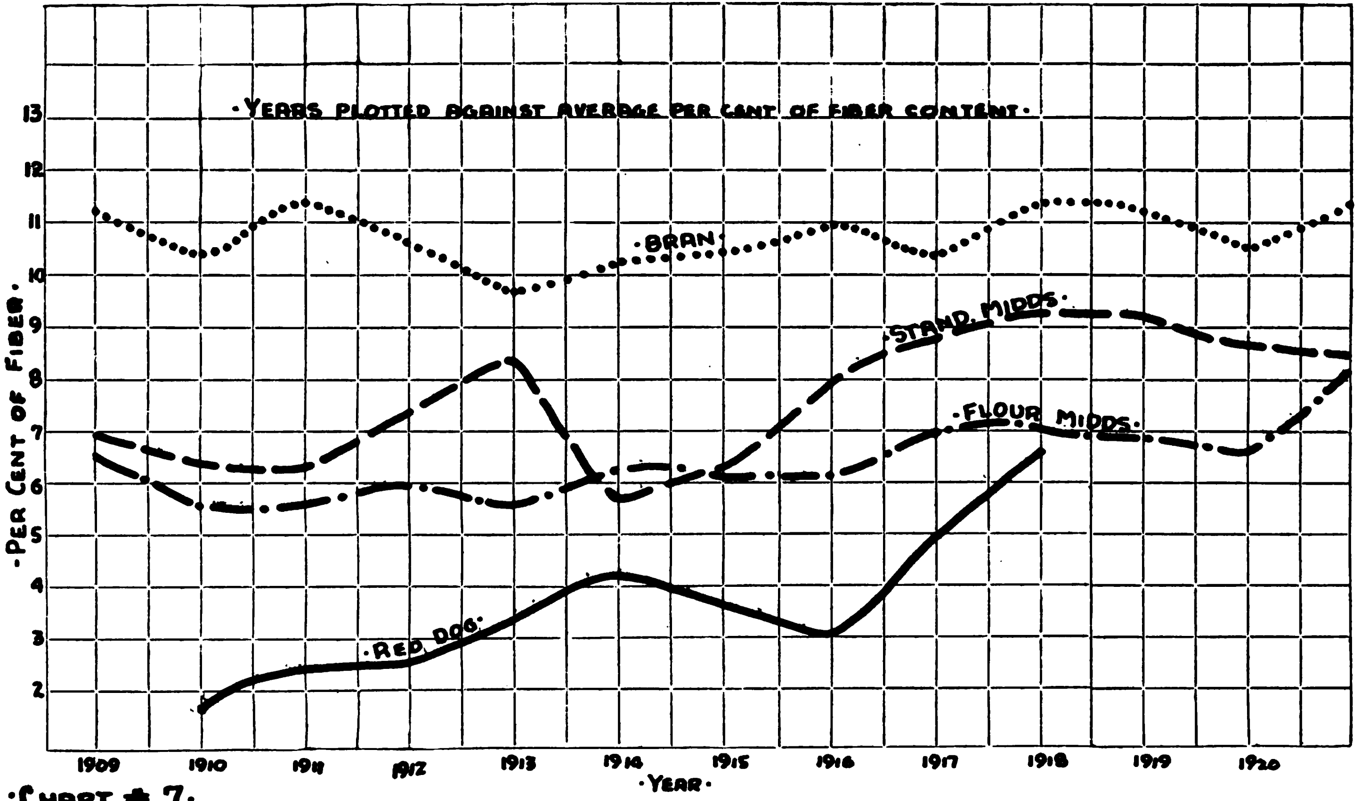
·CHART #4·


·YEARS PLOTTED AGAINST AVERAGE PER CENT OF FIBER CONTENT·
BRAN
STAND. MIDDS.
FLOUR MIDDS.
RED DOG
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
·YEAR·
14
13
12
11
10
9
8
7
6
5
4
3
2
·PER CENT OF FIBER·

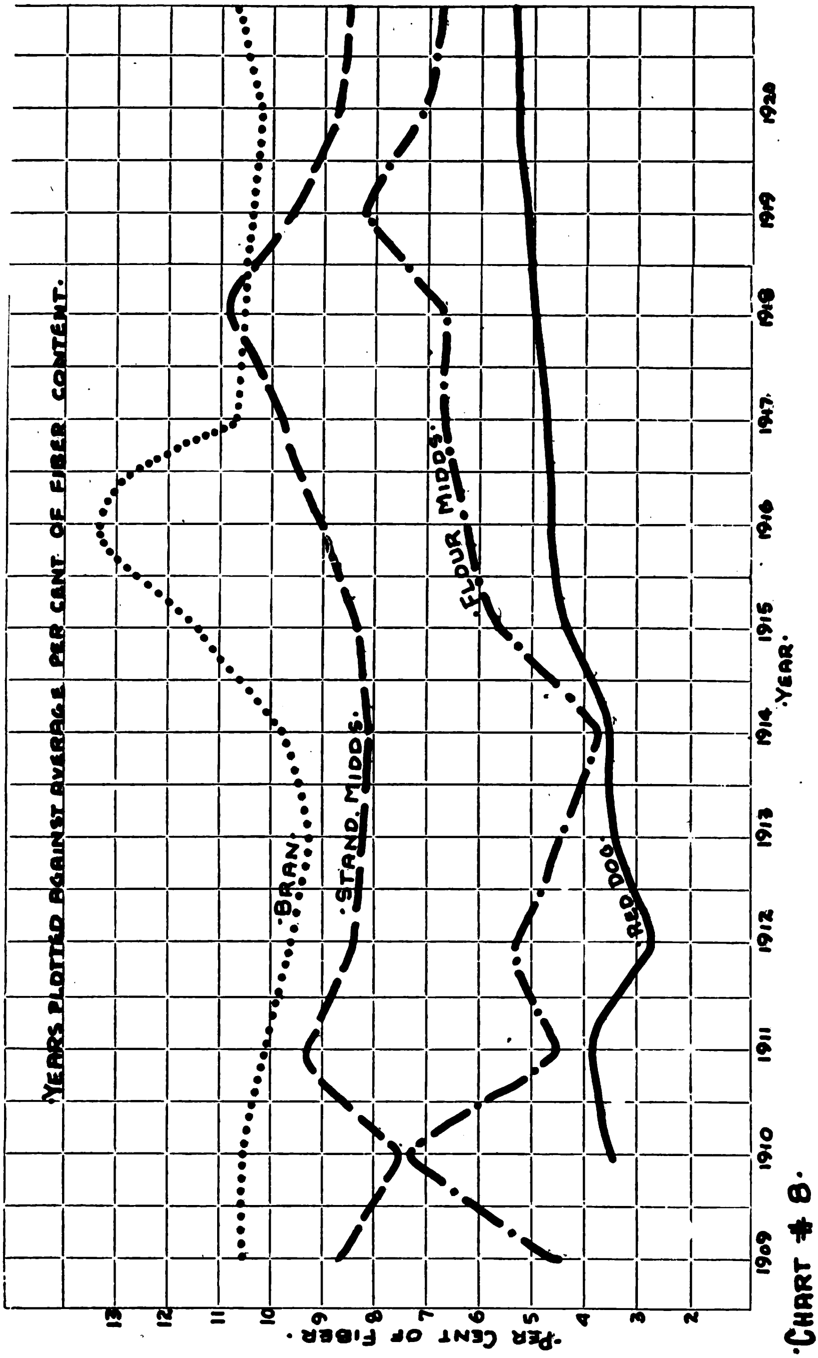
·CHART # 5·


·YEARS PLOTTED AGAINST AVERAGE PER CENT OF FIBER CONTENT·
·BRAN·
·STAND. MIDDS·
·FLOUR MIDDS·
·RED DOG·
12
11
10
9
8
7
6
5
4
3
2
·PER CENT OF FIBER·
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
·YEAR·

·CHART # 6·


·Years plotted against average per cent of fiber content·
·Per Cent of Fiber·
13
12
11
10
9
8
7
6
5
4
3
2
·Bran·
·Stand. Midds·
·Flour Midds·
·Red Dog·
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
·Year·

·Chart # 7·


·YEARS PLOTTED AGAINST AVERAGE PER CENT OF FIBER CONTENT·
·BRAN·
·STAND. MIDDS·
·FLOUR MIDDS·
·RED DOG·
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
·YEAR·
13
12
11
10
9
8
7
6
5
4
3
2
·PER CENT OF FIBER·

·CHART # 8·

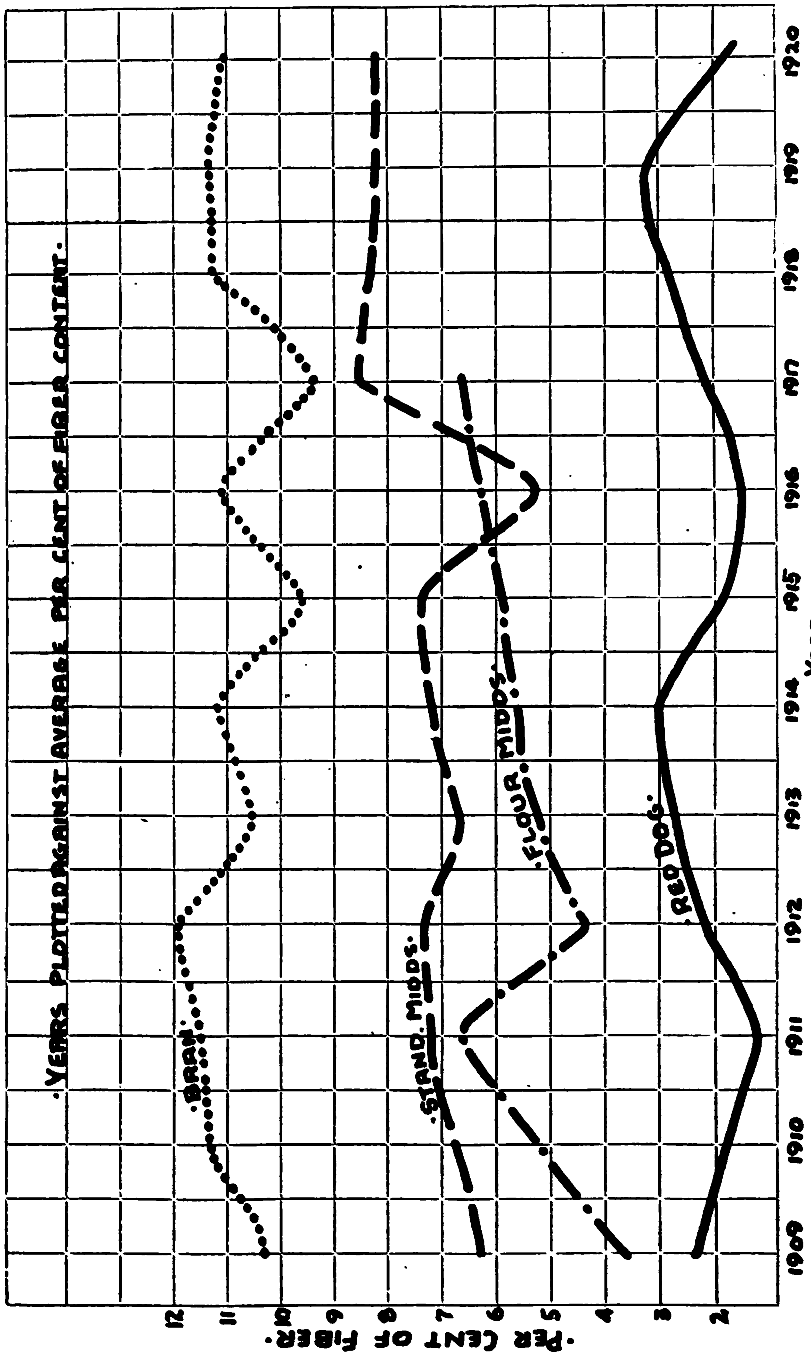

YEARS PLOTTED AGAINST AVERAGE PER CENT OF FIBER CONTENT.
BRAN.
STAND. MIDDS.
FLOUR MIDDS.
RED DOG.
YEAR.
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
PER CENT OF FIBER.
12
11
10
9
8
7
6
5
4
3
2

CHART # 9.

4, 6 and 9 would be entirely satisfactory. In other words, if those standards were adopted and two mills would label their standard middlings as *bran middlings*, six out of seven mills would show a very fair record.

These mills were purposely selected since they sell a large proportion of the mill feeds sold in Wisconsin.

Regarding the non-millers who grind bran, so far as is known there is only one firm doing this who does business in Wisconsin. This is a St. Paul firm. He was reported to Minnesota and Federal authorities and will be duly dealt with. The present definitions handle cases of this kind satisfactorily.

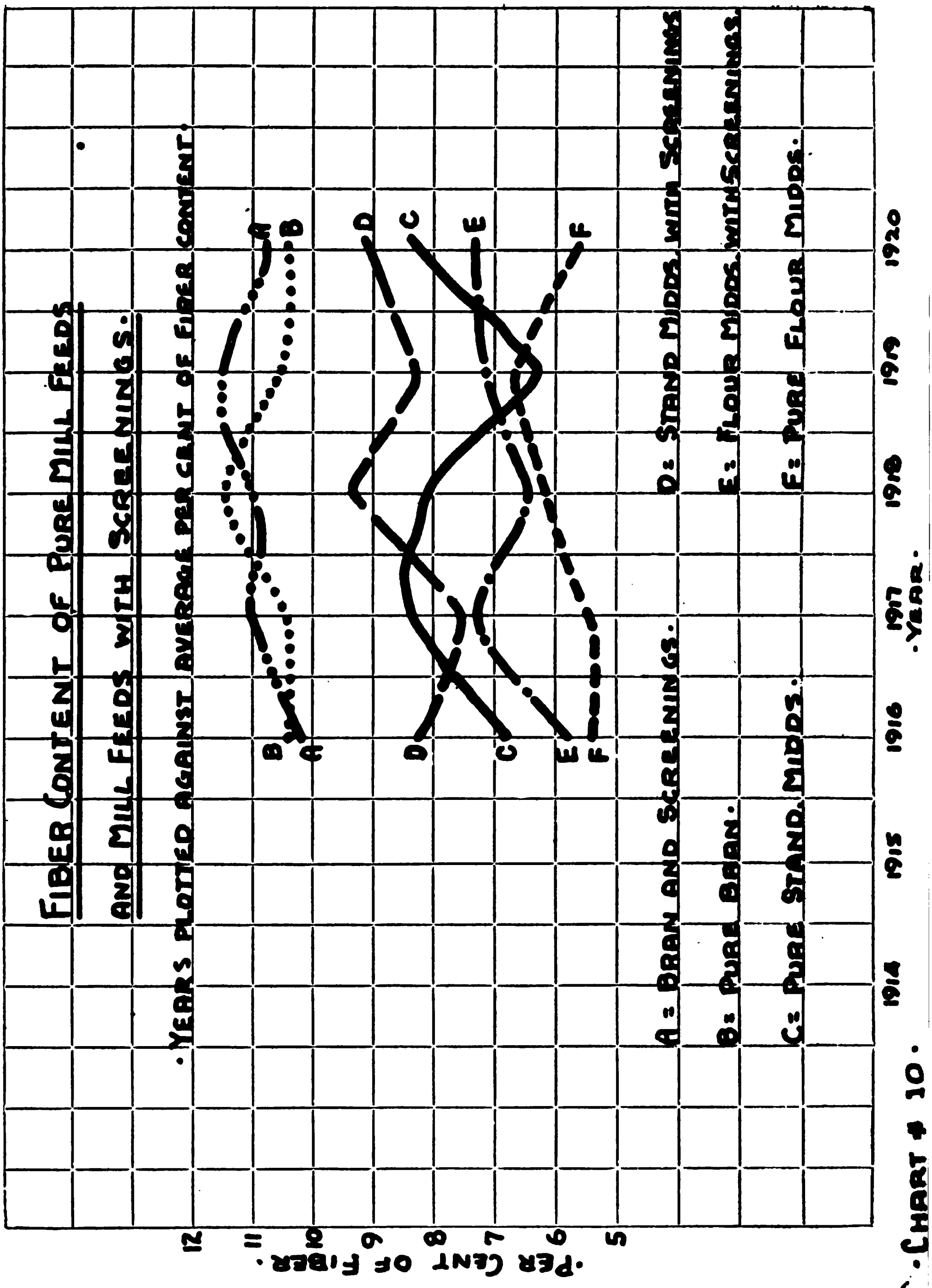
No differentiation was made between the pure wheat feeds and those containing screenings in the charts discussed since no separate records were kept on these prior to 1916. The curves for pure feeds and feeds and screenings for the five years are given in Chart 10. Curves for pure bran and bran with screenings are very similar. In the case of middlings the average difference is considerable. In most of the individual mills reported screenings were used for bran and standard middlings, and mill feeds with screenings were in mind when the standards were suggested. The writer does not feel committed to the standards named, but they are suggested by the records as a basis for discussion.

Even if screenings were the main modifying factor (which is usually not the case) in the fiber content of middlings it may be contended that if enough screenings are added to flour middlings, for example, to bring it out of that class, it loses its feed value as flour middlings and should, therefore, lose its identity as such.

The object in adopting some sort of standards is not primarily to "get" someone, but to make each product stand out for some reasonably definite thing. This is only fair and right for all parties concerned. If a miller wishes to grind bran to meet an unusual demand for fine ground feed let him do it. But fine ground bran is not standard middlings and should not be labeled as such. Again, when there is a big difference in price of standard and flour middlings should a mere exchange of label be permitted in order to allow the seller to get $10 to $15 per ton more for his feed? The average crude fiber content of all standard middlings for thirteen years is 7.83 per cent, and the average fiber content of standard middlings for 1920 was 8.55 per cent. Compare this with the fiber content of four samples of flour middlings sold in 1919-1920—8.55, 9.49, 9.01, 9.49. These are exceptions, but it is the exceptions that need looking after.

Inspection and Analyses of Fertilizers

The large increase in analyses of fertilizers is shown in the table which appears in the Commissioner's report. More than twice as many samples were analyzed in 1922 as in any previous year. The use of fertilizers in Wisconsin is increasing and it is right and proper that this division should pay more attention to this work. Most of


FIBER CONTENT OF PURE MILL FEEDS
AND MILL FEEDS WITH SCREENINGS.
·YEARS PLOTTED AGAINST AVERAGE PER CENT OF FIBER CONTENT·
A
B
C
D
E
F
A: BRAN AND SCREENINGS.
B: PURE BRAN.
C: PURE STAND. MIDDS.
D: STAND MIDDS. WITH SCREENINGS
E: FLOUR MIDDS. WITH SCREENINGS.
E: PURE FLOUR MIDDS.
12
11
10
9
8
7
6
5
·PER CENT OF FIBER·
1914
1915
1916
1917
1918
1919
1920
·YEAR·

·CHART # 10·

the fertilizers sold in Wisconsin are made by large firms who maintain strict chemical control and most of the products met their claims in every respect.

There were two products of low value offered for sale, although marvelous claims were made for them in advertising matter. One of these was nothing more than peat reinforced with a small amount of potash. Now peat contains some nitrogen and a trace of phosphorus, but the low availability of plant food in peat has been established by numerous experiments. While applying peat from a bed to a nearby field low in organic matter is sound practice, the purchase of this product in bags, at a price paid for high grade fertilizers, is profitable to no one but the seller. Even with the small amount of potash present (1 to 2 per cent) a fair valuation would be not over $7 or $8 per ton, while the price charged ranged from $40 to $60 per ton. The other product was a shale from a deposit in the upper Michigan. This product was represented by the seller to be somewhat uneven in character, but samples collected by himself had run high in phosphoric acid and nitrogen. Analyses of samples made in this laboratory and in the Michigan state laboratory, showed the samples to contain little more plant food than our clay soils. The seller claimed that he had made experiments which showed marvelous increases in crop production, but disinterested experiments by the agricultural agent for a railroad company showed no increases. So far as was known no sales of this product were made in Wisconsin, but from numerous inquiries made of this division by county agents and farmers, apparently an extensive advertising campaign was conducted in northern Wisconsin. A vigorous campaign of publicity, conducted both by correspondence and through newspapers regarding both these products effectually checked their sales. It is impossible to estimate the indirect saving to farmers in connection with these two products as a result of this campaign, but it was undoubtedly a very considerable sum.

Character of Nitrogen in Mixed Fertilizers

The nitrogen in a so-called complete or ammoniated mixed fertilizer supplies only a small part of the requirements of the crop. Its use is advocated to give the plant an early start and tide it over the cold weather until spring warmth starts, through biological agencies, to their task of converting the unavailable stores of soil nitrogen into nitrates. Therefore, if this nitrogen is to serve its function it should be in a form immediately available for plant use. In all experimental trials regarding the availability of nitrogen, large amounts have been used—10 to 20 times as much as is usually applied in mixed fertilizers. In these cases nitrogen from nitrates or Chili saltpeter has proven more effective than ammonium sulfate and much more than even high grade "organic ammoniates" or high grade nitrogen containing animal and plant by-products, such as dried blood, tankage and cottonseed meal. Now in these trials enough, or nearly enough, nitrogen was supplied to meet the entire needs of the crop—to carry it entirely, or almost entirely, from planting to maturity. Therefore, this nitrogen was used not only to give the young plants an early start but to supply the plant with nitrogen after soil bacteria had converted these different forms into nitrate. Therefor, the value of nitrogen in the form of nitrate as compared with other forms, in an ordinary mixed fertilizer, either high or low analysis, would be of greater advantage than in the cases where larger quantities were used. In former years the availability of nitrogen by the Street or neutral permanganate method has been determined. This method will tell whether the nitrogen is from a high grade source, including nitrates, ammonium salts, and high grade organic fertilizer, or from low grade sources such as untreated leather scraps, wool waste and peat. But from what has been said in the preceding paragraph it is seen that more complete information is necessary. Consequently, beginning with the 1922 season the forms of nitrogen in mixed fertilizers have been determined. These results show that few general crop fertilizers contain nitrate nitrogen and that none of them contained all their nitrogen in the form of nitrates. This raises a very important question which is referred to soil chemists and agronomists generally, namely, to determine whether small amounts of nitrogen in mixed fertilizers are profitable at all in a rational system of farming and, if so, which forms are profitable and which are not, in the amounts usually supplied to crops.

Agricultural Limes

At the present time more agricultural lime is used than commercial fertilizers proper. Last year more than 150,000 tons of lime were used, while 50 times that amount could be used with profit. While the cost per ton is small, large applications are required and freight costs are heavy. Therefore, the relative values of putting down a unit value of lime at given points are of great importance to Wisconsin farmers. In order to render this service to farmers, all plants selling lime in Wisconsin were visited this spring as early as possible and complete information was in the farmer's hands at buying time, showing chemical anlyses, mechanical analyses, price per ton and freight rates. With this information farmers could easily determine what lime was cheapest in their particular locality.

Legume Bacteria and Other Soil Inoculants

The legislature of 1921 amended the fertilizer law to include in its provisions the sale of legume bacteria and other micro-organisms which promote, or are alleged to promote the growth of higher plants. The result of this law has already proven its worth. A spurious product was sold which was costing farmers large sums of money. County agencies were being purchased for $500.00 each and well meaning men were thus being defrauded. The refusal to grant a permit and the broadcasting of information effectually checked its sale.

Thirty-eight samples of bacteria were examined in accordance with this act and a report will be issued shortly.

Cooperation with Division of Insect and Plant Disease Control

This division has cooperated with the division of insect and plant disease control in the analyses of insecticides. At the suggestion of Dr. Fracker especial attention has been paid to proprietary products manufactured in Wisconsin. The results indicate that the products substantially met their claims and no serious case of misbranding or adulteration was found. It was noted, however, in many cases that the price charged was entirely out of proportion to the value of the product as compared with the price of the unmixed material on the market. The results of these analyses follow:

Analyses of Insecticides

		Guaranteed	Found
Pyrox Bowker Insecticide Co., Boston, Mass.	Copper	8.5	8.9
	Total arsenic	3.26	3.36
	Dry arsenate of lead	16.67	14.03
	Inert material	74.83	73.71
Nico Fume Dana & Worm Drug Co., Fond du Lac, Wis.	Nicotine		39.8
Excito Insecticide Excito Chemical Co., Eau Claire, Wis.	Probably mixture of Kerosene Turpentine Gasoline		
Black Flag Insect Powder Gilpin, Langson & Co., Baltimore, Md.	Probably Pyrethreum		
Slug Shot Hammond's Slug Shot Works, New York City	Sulphur	6.0	6.18
	Copper sulphate aq.	1.0	1.03
	Nicotine	Trace	Present
	Copper arsenite aq.	1.5	1.79
	Carbolic acid	.4	?
	Metalic arsenic	.785	1.09
Magic Ant Exterminator Hertel Chemical Co., Burlington, Wis.	Tartar emetic		66.5
	Aqua		1.14
	Undetermined aqua insoluble substances		26.0
	Unaccounted		6.3
The Only Moth Killer C. Luederitz, Milwaukee, Wis.	Napthalene		76.0
	Borax		Remainder

		Guaranteed	Found
P. D. Q. (Pesky Devil's Quietus) Own Chemical Co., Terre Haute, Indiana	Probably Commercial napthalene Colored with aniline dye		
Roach Food Wm. Peterman, Inc. New York City	Sodium fluoride		36.7
	Starch or flour		Remainder
Ant Food Wm. Peterman, Inc. New York City	Sodium fluoride	65-75	66.7
Moth Food Wm. Peterman, Inc., New York City	Sodium fluoride	40-50	42.4
Diolice Roberts Veterinary Co., Waukesha, Wis.	Napthalene	12.0	17.1
	Sulphur	23.0	14.7
	Nicotine	Trace	Present
	Inert material	65.0	68.2
Carco Standard Chemical Co., Tacoma, Wash.	Probably Coal tar or Creosote product		
Black Leaf 40 Tobacco By-Products Co., Louisville, Ky.	Nicotine	40.0	39.6
	Inert material	60.0	60.4
Bug Rid Harry F. Wex, Milwaukee, Wis.	Sodium fluoride	80.0	84.4
	Inert material	20.0	15.6
Pure Insect Powder Wisconsin Pharmacal Co., Milwaukee, Wis.	Probably Pure pyrethreum		
Wisconsin Lice Powder Wisconsin Pharmacal Co., Milwaukee, Wis.	Nicotine	.1	Present
	Napthalene	10.0	18.0
	Inert material	89.9	82.0
Arro Bug-Killer Wisconsin Pharmacal Co., Milwaukee, Wis.	Probably Kerosene Red coloring agent		

Cooperation with the United States Department

Illegal interstate shipments of feeds are reported to federal authorities for prosecution. These carloads of illegally sold feed were seized under the United States Food and Drug Act, and two samples of misbranded feed were reported to federal officials for prosecution.

Cooperation with National Association of Feed Control Officials

The work on wheat mill feed standards has been discussed. In addition the division is now conducting, in cooperation with other states, studies for this Association on the following subjects: Definitions for feeding tankage and other meat products; also corn red dog flour and undegerminated vs. degerminated cracked corn in poultry feeds. This work is being done in consultation with Professors Hart, Morrison, Steenbock and Halpin. These problems all have a practical bearing on the economical purchase of feed stuffs. The writer is chairman of the executive committee of this association.

Cooperation with the Wisconsin Railroad Commission

In connection with the application of the Wisconsin Railroad Commission to the Interstate Commerce Commission for a lower rate on feeds, this division spent considerable time in compiling data on the consumption of feed in Wisconsin, manufactured outside the state. It is estimated that fully half the feed consumed on Wisconsin farms is manufactured outside the state and that it amounts to between 250,000 and 300,000 tons annually. A lower rate on this commodity would, therefore, be of immense benefit to Wisconsin farmers.

Acknowledgments

The writer is glad to acknowledge the cordial spirit of cooperation shown by his colleagues in laboratory, field, and office which has made the success of this work possible. He wishes especially to express to Dr. E. B. Fred his deep appreciation for services rendered gratuitously in the supervision of the examination of legume cultures, and the development of methods in connection with the inspection of this class of goods. Thanks are also extended to Mr. Lunz for his cooperation in field work; to Dr. Fracker for his suggestions relative to the collection of insecticide samples; and to Messrs. O. R. Brunkow and A. Black for their efficient services when employed temporarily for making fertilizer and insecticide analyses.

WISCONSIN BOARD OF VETERINARY EXAMINERS

T. H. FERGUSON, *Secretary.*

The Board of Veterinary Examiners was primarily organized to conduct examinations of persons desiring to practice as veterinarians. Its other duties are to register annually all licensed veterinarians; recommend for revocation the license of any who prove unfit for their duties; institute proceedings through the district attorney of any county where individuals are practicing veterinary medicine illegally, whenever complaint is made; and to generally protect live stock interests from incompetent and improper treatment of its stock.

Organization of Board

The board is composed of three veterinarians appointed by the commissioner of agriculture who with the commissioner act as a trial board in all hearings brought before it. In such cases the legal matters are attended to by the attorney general's office. Through this arrangement the examining board has been greatly benefited by its consolidation with the Department of Agriculture. The three members act as president, vice president and secretary-treasurer. The secretary-treasurer keeps all records, handles the correspondence and collects all fees. The fees are remitted to the commissioner of agriculture, who deposits the same in the general funds of the state. The moneys collected for license renewals, examination fees and license fees are sufficient to meet the expenses of the board so that no appropriation derived from other sources is necessary.

Meetings

Meetings are held annually in June of each year at the state capitol to conduct examinations of all applicants for license to practice as veterinarians. Such examinations are both written and oral. All examination papers and records of standings are kept on file. Such other meetings as are necessary are called by the commissioner of agriculture or president of the board. At the 1921 regular annual examination, held June 1 and 2 at the state capitol, twenty-three applications for examination were on file and of this number twenty-one appeared. Licenses were granted to fifteen applicants, and of the six who failed four were graduates of recognized colleges. Two special meetings were held during the year, one at Madison and the other at Rice Lake. In 1922 the regular examination was held June 6 and 7 at the state capitol and nineteen applicants were examined. Thirteen of these passed and were issued licenses. Five of those who failed were graduates of recognized colleges. Two special meetings were held as in 1921.

Questions for examinations are carefully compiled by each member of the board and then arranged by the secretary for each examination. These questions are placed on file and consulted each year so there will be no direct repetition. Questions are asked that will test, not only the applicant's technical knowledge, but also his resourcefulness and ability to cope with conditions as he will meet them in emergencies. The examinations each year are progressively more difficult in order to keep pace with the advancement being made in veterinary education, as well as to supply the live stock interests with better veterinary service. It is the constant aim of the board to raise the standard of qualifications for practitioners as much as possible.

Register and License Renewal

A register is kept by the secretary showing the name, date when license was issued, college of graduation and address of all who are licensed. Changes in addresses are noted therein as they occur. The names are arranged by counties. In this way it is possible to notify anyone just where veterinary service is available in the state. Licenses are renewable annually. In March, 1921, license renewal cards were sent out to all of the 621 who were on the register, and of this number 607 remitted their fee, including about sixty who were from other states. In March, 1922, the usual notices were sent out and 589 renewal licenses were granted, including sixty-four from other states. There has been a slight falling off in the number of registered veterinarians. A few have failed to renew their licenses and have been dropped from the list, and a number are deceased. When the renewal card and fees are returned a certificate of license is issued which is good for one year expiring March 31st. After each yearly registration a list of all licensed men in each county is sent to the county clerk who enters the names in his records kept for that purpose.

Publications

As often as required a bulletin is prepared giving the essentials of the veterinary law; the names of all veterinarians arranged alphabetically; and in addition the counties are arranged alphabetically giving the names of all veterinarians in their respective counties. The last list was issued in January, 1922. Lists are mailed to all registered men, and each year to all newly licensed veterinarians.

Correspondence

Complaints are frequently received from stock owners and veterinarians of persons practicing without a license. In most cases a letter from the secretary requesting the discontinuance of such practice has been sufficient, but where it has no effect the complaint and record are sent to the district attorney of the county where the offense was committed. In most cases he has been able to stop the illegal practice without court proceedings. Where necessary the secretary appears in person with his records to assist the district attorney in the prosecution. Frequent inquiries from veterinarians in other states in regard to our veterinary law are answered. Some of these men anticipate a less stringent law in this state, and others expect to enter without examination. Undoubtedly, our law keeps out some who are not making good as practitioners elsewhere.

Biological, chemical and general supply firms are frequent correspondents in regard to our list, as are also the several veterinary colleges.

Meetings

During the years of 1921 and 1922 different members of the board have attended the annual meetings of the American Veterinary Medical Association, Faculties of Veterinary Colleges and Examining Boards. The United States Live Stock Sanitary Association as well as the Wisconsin Veterinary Medical Association's meetings were attended at personal expense.

Recommendations

We earnestly recommend that our veterinary laws be strengthened to maintain and increase our standards, since a little laxity in the law allows a loophole for more or less quackery, which is to be greatly regretted. Our live stock interests are second to none, and merit and demand the best skill obtainable and should have the protection from incompetent service that only stringent laws can give. While the board has stopped a number of illegal practitioners each year, it is difficult under the law to properly control the menace.

DIVISION OF LIVE STOCK SANITATION

O. H. ELIASON, *Director*

The live stock industry of Wisconsin represents an investment of over one-half billion dollars (not including land) and is the source of 80% of the farmers' income. During 1922 the value of live stock and live stock products sold is estimated to be somewhat over a quarter of a billion dollars.

To protect this industry by the combating of infectious and contagious diseases is the duty of the division of live stock sanitation. Its work is of importance to the producer and consumer alike. The latter is interested in tuberculosis-free cattle, as that means clean, healthy dairy products. The farmer's interest lies in the realization that clean products and economical production can come only through a healthy herd and that an animal's valuation, especially if of a dairy type, depends to a great extent upon its bill of health. Breeders know that the value of any animal is determined principally by its health certificate. It is the aim of every dairyman to develop high producing cows, but the protection of the health of such animals should be his first consideration. Any breeder can develop his herd so as to greatly increase its productiveness, but if he neglects to test for tuberculosis from the beginning and later finds his herd infected, his efforts will have been of no avail.

Appreciation of clean, healthy dairy products by the public and the realization by the breeders that bovine tuberculosis is undermining the live stock industry has culminated in a general demand that the tuberculosis cow must go. Tuberculosis eradication is, therefore, the greatest problem confronting this division. The development and the wider recognition of the intradermal test has been and will be of great aid in the solution of this problem as its cost of application is considerably less.

The subject of indemnity for condemned animals is especially of importance for upon the sum made available will depend the suppression or spread of bovine tuberculosis. This is a problem which merits the attention of every taxpayer, live stock owner and the consuming public. Its solution should be met now.

Wisconsin farmers have been fortunate in the notable reduction of outbreaks of various animal disease such as hemorrhagic septicemia, rabies and hog cholera.

TUBERCULOSIS ERADICATION

Probably no subject in agriculture occupies more attention at this time than tuberculosis eradication among cattle and swine. It has come forcibly to the attention of all people interested in live stock that this disease is widening the difference between the price paid by the packer and that paid by the consumer. The public at large is interested in this subject on account of securing a more healthy milk supply. Dr. Evans, of Chicago, has said, "Nothing can be done, whether it is pasteurization or tuberculin testing, without increasing the value and quality of the milk, cream, butter and other products incidental thereto." The eradication of this disease will not only increase efficiency and production among cattle, both from a beef and dairy standpoint, but it will produce a finer, better quality for the consuming public.

Another vital point in tuberculosis eradication is the fact that Wisconsin is the source of a large number of dairy and breeding cattle which are sent to other states to form the foundation for herds. This is especially true of the grade animal. Incidentally, we probably sell as many pure-bred cattle as any other state, but the grade trade exceeds that of any other state. Many of the southern and western states that are now endeavoring to get their farmers to engage in dairying, have spent large sums of money to eradicate other diseases. This is especially true of the South with the cattle tick and the West with the scab proposition.

Most of these states have, as yet, only a low percentage of tuberculosis in their herds. It follows, then, that they want to purchase stock that is free from this disease. Every buyer coming into the state from those sections inquires, "Where can we buy cattle that are free from tuberculosis?" They not only demand tested animals or those sold subject to test, but they want to know that there is less than 10% of tuberculosis in the herd from which they came. These instructions are received from their home states. This has brought forcibly to the mind of the cattle breeder the fact that he must get his herd tested to find out whether infection exists. If so, he must immediately proceed to have the diseased animals removed from his herd.

History of Eradication

There are four historic epochs in the history of tuberculosis eradication since its inception in the United States. These are: first, the so-called Milwaukee Milk Ordinance case; second, the compulsory test of animals for dairy and breeding purposes moved from one herd to another, in 1910 and 1911; third, the accredited herd plan described by Dr. O. E. Dyson, then state veterinarian of Illinois, in 1914; and fourth, the inception of the county eradication plan by this division in 1916.

The Milwaukee Milk Ordinance case was carried to the United States Supreme Court and it was decided that cities had the right to pass ordinances for the protection of their milk supply. This ordinance, however, failed in its practical application, due to the reason that no preliminary arrangements had been made for the testing of cattle. The compulsory feature of the Wisconsin test of 1910-1911 failed for the same reason. The law was enacted without sufficient provision for organization and did not even provide for an adequate supply of tuberculin. Up to 1917 tuberculosis eradication had been undertaken in various ways by individual states, but, due to inadequate appropriations, sufficient supervision was not provided to work with breeders and veterinarians to make it a success.

In 1917 congress authorized the Department of Agriculture to undertake some system of tuberculosis eradication. Two methods were adopted by it, namely, the accredited herd and the area plan. At the annual meeting of the United States Live Stock Sanitary Association, held in Chicago, these methods were discussed and various provisions agreed upon by a committee of breeders and veterinarians.

A provision of the Wisconsin law of 1917 authorized the Department of Agriculture to undertake tuberculosis eradication in a circumscribed area provided 51% of the cattle owners petitioned the department. Actual work on this program commenced in February, 1918, in Waukesha county. War conditions and lack of competent help seriously interfered with its practical demonstration at that time. After the armistice the work was continued in the same county, but, on account of opposition due to the fact that it had dragged along so much, it became impractical to continue over the entire county.

In the meantime work had progressed on the accredited herd plan, and this project was undertaken on the cooperative basis with the United States government in January, 1919. This work proceeded rapidly and we soon took the position at the head of the list of states in numbers of accredited herds. At the present time we have 2,086 herds fully accredited, 3,689 herds having had one clean test, and 6,617 herds under supervision. We have also approximately 1,000 herds on the waiting list. The principal reason we have so many on the wait-

This was a member of a fine herd of pure bred cattle which were found 100 per cent tubercular. Do not raise the herd first and then test. A test in time save nine.

ing list is the lack of sufficient indemnity funds. For this same reason we have not been able to continue the work through the entire year and it has been necessary to limit the force on this work. As a consequence there is now one state which leads us in the number of herds accredited. This project has aided materially in helping our markets. It is also an educational feature which generally results in the people wanting to clean up the entire area.

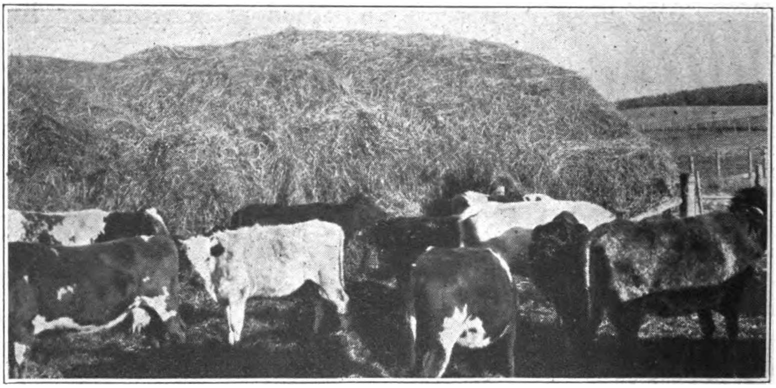
County or Area Test Plan

The area project has also been seriously hampered due to lack of indemnity funds. However, the division was able to demonstrate conclusively in the past season that the plan is feasible, economical and valuable.

Fourteen Counties Tested

We now have a solid block of territory consisting of fourteen counties, namely: Barron, Lincoln, Bayfield, Iron, Price, Rusk, Sawyer, Chippewa, Oneida, Washburn, Ashland, Vilas, Douglas and Eau Claire. The last eleven have been completed since July, 1921. This comprises a task of visiting 24,000 farms, applying the test to 164,000 milk cows and 147,000 other cattle, or a total of 311,000 cattle. Of this number approximately 200,000 head of cattle on 16,000 premises have been visited since July 20, 1921.

As an illustration of what can be done in this work attention is called to the fact that Eau Claire county, with 32,680 head of cattle, was tested in twenty-five days, and a week later all reactors had been removed. Eighteen veterinarians participated more or less. This was the last county tested during the past season and was accomplished in November. After an organization becomes seasoned in this work it progresses without any friction or irritation on the part of the workers or the people.



After locating the infected herd the reactors are removed—premises cleaned and disinfected, and remaining members of the herd retested until clean. A dry season is a wonderful disinfector.

The survey discloses the fact that tuberculosis is still comparatively low in this area, the highest degree of infection in any one county being 3%. It also brought forcibly to the attention of the people of this section the danger of careless importations and impressed the cattle owner with the necessity of precaution when purchasing additions to his herd. For instance, the survey in one county brought out the fact that one cow was responsible for the infection of approximately twenty farms, covering an area of a little more than one township.

Tested Areas Protected

Regulations governing the introduction of cattle into the tested area have been promulgated and are in operation. Infected herds are under supervision and will be tested continuously until cleaned up. Regulations governing the transferring of cattle within tested areas, or to be brought in, are cited under "Regulations" in this report.

The economy of this plan of inspection was brought out strikingly in the last summer's campaign. While naturally the number of stops and number of cattle varies to a considerable degree from one week to another, depending upon the number of cattle in the herd, the cooperation received from the owner, and weather conditions, we have had several instances where our inspectors have made remarkable records. In one week one inspector tested 106 herds containing 800 head of cattle. In order to accomplish this at least two trips had to be made to each farm, one for the purpose of injecting with tuberculin and ear-tagging each animal, and the other for final examination.

Disposal of Reactors

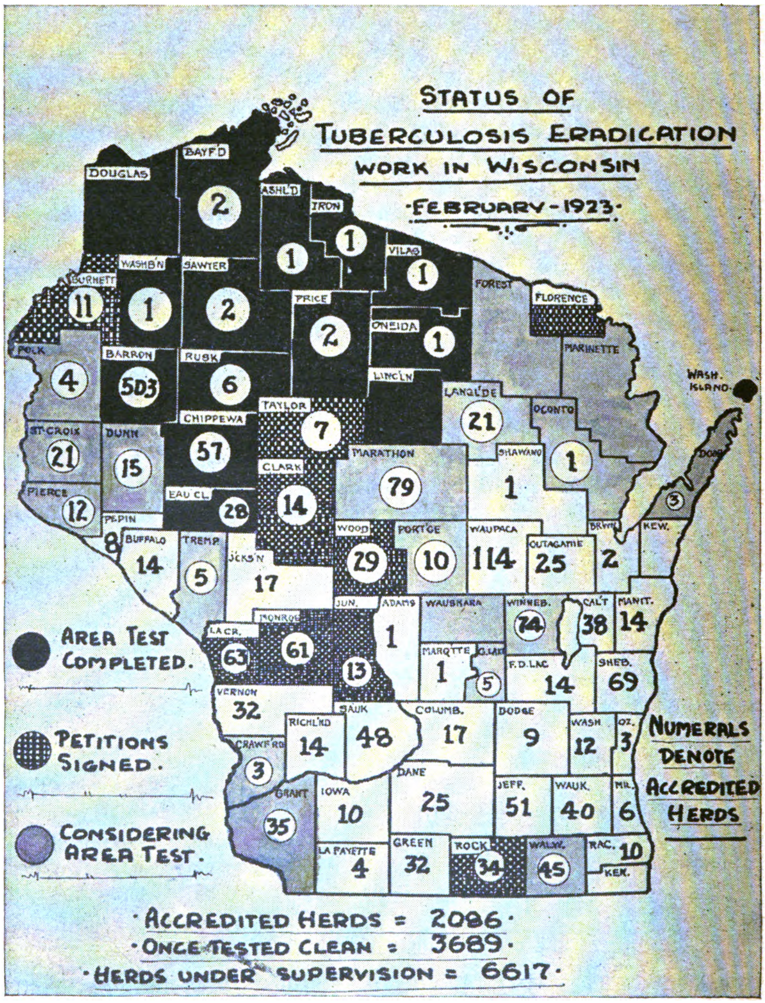
The problem of disposing of reactors is considerably expedited under the area plan. Inspectors are able to be present at the time of disposal to arrange so that shipments may be made in carload lots whenever possible, thereby lessening freight charges.

Value of This Work

Tuberculosis eradication, especially if done under the area plan, is a valuable advertising agency. Buyers from other states who come to Wisconsin to secure dairy cattle, naturally go where the animals are known to be free from tuberculosis. Barron county, which was the first tested county in the United States, is a good illustration of this. During the first nine months after the test was completed thirty-five carloads of dairy cattle were sold to other states and surrounding counties, while previously only two or three carloads were so sold annually. Ashland county had the same experience. The first carload of dairy cattle ever shipped from this county was sent out very shortly after the completion of the area test.

Lack of Indemnity Hampers Work

Considerable more work could have been done in the last biennium had there been more indemnity money available. However, it should not be understood that the work under the area plan was the chief cause of the depletion of the indemnity fund. Farmers throughout the state do not wait for the state inspectors to come to test their cattle. They hire their own veterinarians and submit their reports to the state. As an example, one community tested out practically two townships, which was done almost exclusively by one local veterinary practitioner. The people in that area are ready to continue testing until their herds are clean in order to safeguard their herds in the future. However, they want to be assured that the state is going to stand back



of this work, at least to the extent of supplying the indemnity funds while the process of eradication is going on.

The outlook now indicates that there will be several counties that will present petitions to this department to have their cattle tested during the next biennium. There was a time when it might have been necessary to discourage a wholesale attack on this disease on account of lack of methods and help, but that period is past. We need only to be assured that adequate funds will be provided to carry this work to a successful conclusion.

The division takes no active part in the agitation for petitions. Due to the fact that this law becomes compulsory when legal petitions are presented, we believe the invitation should come strictly from the people within the county. We are ready to supply information upon request and occasionally present the subject to the people when invited to do so. When the law becomes operative we are then in the position of an inspector in a compulsory capacity, enforcing the law of the people.

STATE-FEDERAL ACCREDITED HERDS

BY DR. JAMES S. HEALY

The activities of the accredited herd project have been intensive for the past biennium. The support of the breeders who have become better acquainted with the project through the farm agricultural press has sustained the demand for the work, as has also the demands of out of state buyers for cattle identified with this project. The same condition obtains as during the last biennium. We have been unable to take care of the demands of the breeders. There are usually on hand five to seven hundred applicants to whom we are unable to render service. One of the retarding influences has been that about the time the greatest demand occurs each year we have been unable to test new herds due to lack of indemnity money. The state has furnished four men full time and six men part time. The United States Department has furnished fourteen men part time and nine men full time.

This is a joint cooperative project between the State Department of Agriculture, United States Department of Agriculture and the breeders. All the states in the Union, and Alaska and Hawaii are now cooperating under this plan.

The cooperation extended by the agricultural press, university, county agents and cow-testing associations, has been a great factor in the promotion of the work.

In accordance with the agreement, the United States Department of Agriculture will place a veterinary inspector in the field for every such qualified veterinarian that the state places in the project, and will pay in the matter of indemnities, dollar for dollar, with the state department, within the limit set by the state law, namely, $45.00 on a purebred and $20.00 on a grade. The expense of the testing is borne jointly by the state and federal departments. The breeder as a cooperating party is the most important factor in the plan. His obligation is that he will furnish transportation to and from railroad station to the farm or the next adjoining farm if reasonably near to his own, and furnish meals and lodging for the inspector while testing at his farm, and after his herd becomes fully accredited on state-federal tests he agrees to maintain it as an accredited herd on annual tests at his own expense.

The salient points in the agreement are:

1. That an owner shall submit his whole herd for tuberculin test.
2. That he shall not submit any animals that have been injected with tuberculin within sixty days.
3. That he will not submit any animals for test that have ever reacted to the tuberculin test.
4. That he will not allow his cattle to commingle with others that have not been tested.
5. That he will report all sales to the state or federal department.
6. That he will make no additions to herds under supervision unless the animals have been tested and the tests approved by officials in charge of the work.

The other requirements contained in the agreement are based on rules governing sanitation and disease control and are necessary for the protection of the interest of the herd owner. Changes have been made in the accredited herd agreement from time to time, the most important of which delegates fully accredited herds to be tested at the owners' expense by local accredited veterinarians. These veterinarians have qualified by taking a special examination and the best evidence of cooperation the breeder can furnish is to maintain his herd as accredited on annual tests by these practitioners. This enables the state and federal inspectors to extend the work to other breeders who are desirous of becoming identified with the project.

During October, 1920, Wisconsin led the United States in the largest number of accredited herds and we have been able to maintain that leadership the greater part of the time during the biennium. This gives us an enviable position in the live stock world; as a selling state it is of great value. Wisconsin now has the largest number of cattle in accredited herds of any state in the Union.

December 31, 1922, Wisconsin had—

	Herds	Cattle
Fully Accredited	2,086	46,985
Once Tested Free	3,689	67,351
Under Supervision	6,617	151,611

During the biennium an outstanding amount of work was performed notwithstanding the fact that each year we had to curtail on account of lack of indemnity funds. The following table gives the work by quarters:

	Herds	Cattle	Reactors
1920—			
1st Quarter	638	19,112	627
2nd "	791	20,457	774
3rd "	940	24,767	765
4th "	1,156	23,954	745

1921—			
1st Quarter	1,120	29,463	1,258
2nd "	1,310	31,935	1,596
3rd "	1,745	38,963	1,099
4th "	1,496	36,149	1,037
Total for biennium—October 1920-1922	9,166	216,899	7,901

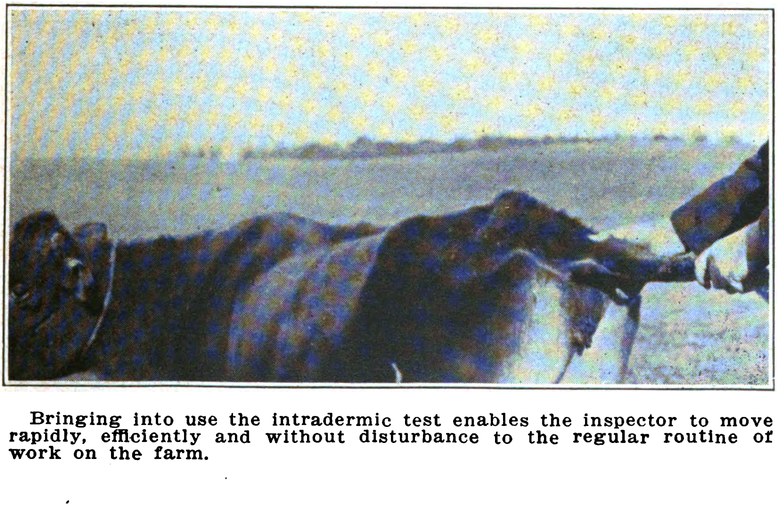
The publicity attending this work, together with the demand for tested cattle, has stimulated breeders with known tuberculous herds to submit them for test. In this way many infectious centers have been eliminated and the survey has located nearly every infected purebred herd in the state. Practically all purebred herds are now under supervision.

During the past biennium the federal department has paid claims amounting to $231,132.80.

The administrative expense on this project for the biennium was as follows:

Federal	$71,593.23
State	37,797.86

Wisconsin being a selling state, the advantages of having a large number of accredited herds from which to sell is obvious, as prospective purchasers from the buying states are instructed to purchase from herds which are under state-federal supervision. Cattle from accredited herds may be shipped interstate for a period of one year without further tests. The plan promotes the interchange of healthy cattle between states. Herds which have passed one negative test and which are fully accredited are published in the "List of Herds Officially Accredited As Free From Tuberculosis and of Herds That Have Passed Successfully One Test With a View to Certification." This publication is given wide circulation throughout the nation and serves as a basis of recommendation to prospective purchasers by live stock offi-



Bringing into use the intradermic test enables the inspector to move rapidly, efficiently and without disturbance to the regular routine of work on the farm.

cials and sanitarians. The uniform plan was the first plan evolved which gave the breeder credit for his efforts toward the eradication of tuberculosis, and the maintenance of a healthy herd. He receives favorable publicity of a character which could not be purchased. The agricultural press and the breeders' associations have unanimously supported this project. Interviews with people from other states and out of state buyers indicate that the money spent on tuberculosis eradication is a good investment for the Wisconsin live stock industry.

The accredited herd work has proven a wonderful sentiment creator for tuberculosis eradication work and has completely changed the sentiment which existed prior to the inception of the work relative to tuberculosis eradication and has created the demand for eradication work on a larger scale—the area or county unit.

Wisconsin's favorable position in this work should be maintained. Sufficient indemnity funds should be provided in order that the work may go on without being curtailed each year and so that all reactors found could be immediately slaughtered.

Indemnity

The establishment of an indemnity feature in the eradication of tuberculosis among cattle no doubt dates back to the constitutional provision which says that no property can be condemned and taken away by the state when it represents some value to the owner. The payment of indemnity is based on the premise that it is better for the state to condemn and remove animals which may be a menace rather than to let them stay in the herd and infect other animals, thus costing more in the end. This has been true of the eradication of glanders, and in other states of such diseases as dourine among horses and foot-and-mouth disease. Various ideas have been brought out lately in connection with indemnity on cattle which have reacted to the tuberculin test. Some contend that the disease can be eradicated with-

Even the cattle on the Indian Reservations are included.

out the payment of indemnity. Such a course, however, in my opinion, is impractical for the reason that tuberculosis eradication necessitates the condemnation of animals, which in fact, do represent some value to the owner. In other words, animals which react to the tuberculin test may be only slightly infected at that time and probably might be useful to the owner. The danger, however, in allowing such animals to remain in the herd is the possibility of their breaking out at any time and infecting a number of other cattle. It is, therefore, necessary that such animals be removed.

While some farmers might be able to bear the loss of such a procedure, there remains a large proportion of people who would not be able to do so. Many farmers have all their earnings tied up in a herd of cattle and the condemnation of this herd, or part of it, would leave them without means of support.

It is not the fault of the present-day breeders that the disease is present. It is due to the fact that society has failed to eradicate this disease long ago and provide proper safeguards. Therefore, indemnity is the essential feature of this program. The project will be successful in proportion to the amount of indemnity provided for cattle which react to the tuberculin test. Every animal suffering from tuberculosis is not subject to the full amount of indemnity. Animals which are in an advanced stage of tuberculosis to the extent where they represent no value to the owner or to the state, are not subject to indemnity. Many such animals are destroyed on the premises without any remuneration to the owner. Furthermore, animals which represent only beef value, cannot strictly be held subject to indemnity. All cattle subject to indemnity are appraised according to their actual value at the time the appraisement is made. This means also that animals so appraised are really valued on a basis of an untested animal.

By looking over the survey of indemnity payments on the following pages, it will be noted that the disease varies considerably in different parts of the state. In recent years the number of farmers who have concluded that the only thing to do is to test their cattle, have become so numerous that the present quota of indemnity has fallen far short of meeting the bills presented. During the last four years it has been necessary to stop all operations on this program for several months. At such times we have failed to get retests on herds which have been found infected and the result is that the disease is not eradicated in those herds, but allowed to repropagate. For this reason sufficient indemnity money should be provided for testing infected herds as often as is thought necessary.

Breeders are aware of the advantages of healthy herds and the demand for the tuberculin test is greater today than ever before. Under the cooperative plan some money will be received from the federal government, but the greater share will have to be provided by the state. In order to meet this demand, a fund of a million dollars a year will be necessary as the state's share of indemnity. After a period of four years it can safely be estimated that indemnities will be decidedly less. This will enable the establishment of a system of testing consistently and regularly. THE LARGER THE INDEMNITY FUND THAT IS SET ASIDE IN THE NEXT TWO YEARS THE LESS WILL BE THE ULTIMATE COST.

HOG CHOLERA CONTROL

Cooperative—State-Federal

BY DR. J. T. PURCELL

The biennial report covering the period July 1, 1920, to June 30, 1922, deals with the activities of a thief who is now operating in several counties in Wisconsin. We are advised that this criminal first began operations in the state of Ohio about 1833, and, possessing more energy than conscience, it enlarged its field of operations until it is now carrying on its business in every state in the Union.

One striking feature of this criminal is that it possesses no means of locomotion. It depends entirely on those whom it would rob to carry or permit it to be carried to their premises. It is almost unbelievable that a thief so handicapped and after ninety years of operation should still be permitted by farmers to steal their property.

An investigation of this enemy of the farmers and stock raisers has shown it to be the hog cholera germ, and it is really interesting how, in spite of its helplessness, it manages to get around over the country and continue its plundering.

One of its favorite methods of getting to the hog pens is by hiding in a scrap of pork or in a bone. This is thrown into the swill pail or garbage barrel and fed to the hogs. After being eaten by the hogs, the rest is easy, for once in the animal, it throws off the infection to other swine in the herd.

Another successful method employed for getting into non-infected premises is to have a farmer purchase a hog which is already sick or which came from a place where cholera existed. After it once gets into a neighborhood it depends on the carelessness of the farmers to permit it to get to other farms. Nothing suits it better than to have a farmer hide the fact that his hogs are sick. Anoher bit of carelessness which pleases the hog cholera germ is for a farmer to throw out the carcass of a hog for dogs to dispose of. This always aids it in getting around to other farms.

During the period covered by this report, our activities have been directed toward securing a closer cooperation between farmer, breeder and veterinarian, and through personal touch with these agencies, to remove or to minimize the obstacles which tend to check progress in hog cholera control. These are:

1st. Inexperience. Confidence of the owner that his trouble is only a temporary disturbance until too late to prevent heavy loss. Early diagnoses is imperative.

2nd. Indifference. Allowing the herd to die without effort to check the progress of the disease, or prevent its spread to other farms.

3rd. Prejudice. Unfortunate losses following vaccination has prejudiced some farmers against the use of serum and virus.

We are able to report that progress is being made along these lines. Through the use of serum and virus properly administered in the right dosage, at the right time, and followed by proper after-care of the vaccinated animals, losses in infected herds have been reduced and wide outbreaks eliminated. The following outline of activities is submitted:

Itemized Statement of Hog Cholera Activities

	July 1, 1920 to June 30, 1921	July 1, 1921 to June 30, 1922
Number veterinarians employed	2	4
Meetings attended	39	61
Meetings addressed	34	47
Total attendance	3,800	6,049
Farm visits on call	293	385
Voluntary visits	188	1,057
Interviews with farmers	496	2,462
Interviews with veterinarians	387	1,204
Interviews with others	180	250
Autopsies	198	312
Premises carded	104	122
Premises cleaned (supervision)	9	14
Cholera outbreaks investigated	155	167
Cholera outbreaks reported by veterinarians	25	66
Total cholera cases reported	180	233
Total counties involved	31	32
Herds vaccinated (supervisions)	96	136
Animals in above herds	4,682	7,016
Miles traveled by railroad	31,897	39,462
Miles traveled by auto	4,616	18,179
Total miles traveled	36,413	57,641

Supervision of Feeder Hogs From Public Stock Yards

	July 1, 1920 to June 30, 1921	July 1, 1921 to June 30, 1922
Total number shipments	10	8
Total number hogs in shipment	1,090	442
Total deaths from cholera	17 (one shipment)	0

Wisconsin regulations require the isolation of all shipments of vaccinated feeder hogs from public markets such as Chicago and St. Paul, and for weekly reports as to their health for a period of twenty-one days It is satisfactory to note that the heavy death rate which was experienced in such shipments during 1918 and 1919 has been almost entirely eliminated because of greater care in selecting subjects for vaccination, and more effective supervision at time of treatment.

Stimulate a Safe Home Industry in Feeder Hogs

Severe losses from hog cholera have been experienced in Wisconsin during the past few years because of a traffic in feeder hogs originating in pig markets and other public sales premises within the state, over which we have at this time no restrictive regulations. It has been definitely established that the unrestricted movement of swine within the state, as it exists at this time, is neither necessary, advisable or practicable, and regulations are therefore being framed which will cause no unnecessary hardship, but which will operate justly and wisely, to protect the swine industry from needless loss through contagious disease.

We seek the cooperation of agencies and individuals who can aid us in controlling losses from hog cholera. To hog feeders and breeders the Wisconsin Department of Agriculture offers a source of information and help to which they can appeal when disease appears in their herds, which merits their confidence that the advice given is not dictated by any taint of commercial greed. To veterinarians we offer a source of information which they can look to to counteract propaganda of biological houses who flood the market with products of questionable value.

Area of Hog Cholera Infection in Wisconsin

County	July 1, '20 to June 30, '21	July 1, '21 to June 30, '22	County	July 1, '20 to June 30, '21	July 1, '21 to June 30, '22
Grant	10	33	Clark	0	7
Iowa	3	13	Rusk	0	1
Lafayette	10	2	St. Croix	8	9
Dane	24	35	Pepin	0	1
Walworth	8	19	La Crosse	14	6
Green	9	1	Chippewa	3	1
Rock	20	18	Buffalo	1	6
Racine	1	2	Dunn	1	3
Milwaukee	14	11	Eau Claire	0	2
Dodge	8	12	Trempealeau	7	1
Fond du Lac	3	24	Vernon	0	2
Sheboygan	2	5	Richland	1	
Jefferson	3	2	Sauk	5	
Columbia	8	3	Winnebago	2	
Kenosha	2	3	Wood	1	
Waukesha	4	2	Oneida	1	
Green Lake	0	1	Pierce	3	
Oconto	0	1	Crawford	2	
Washington	1	5	Barron	1	
Manitowoc	0	2			

Total cholera outbreaks....180
Total counties involved..... 31

Total cholera outbreaks....233
Total counties involved..... 32

OTHER CONTAGIOUS AND INFECTIOUS DISEASES

Contagious Abortion

No constructive program has been mapped out by the national live stock investigators regarding the control of contagious abortion. The United States Bureau of Animal Industry began quite a comprehensive investigation of this disease before the war, but owing to the rapid advance in the price of feed stuffs, it was necessary to eliminate some lines of experiment. Therefore, we are still uncertain as to what measures should be taken for its prevention.

Contagious abortion continues to be a heavy tax on the live stock industry and it is hoped that we can soon recommend some positive measure for its control. At the present time we must depend upon general disinfection and care of the cattle as the first order of prevention. Individual cases among high-priced animals can be aided materially by expert attention, but this is not to be confused with a cure or eradication.

Johnes' Disease

Only one case of Johnes' disease has been reported, but it is in all probability more widely spread than is generally supposed. The only visible symptom is that of intermittent diarrhea with gradual emaciation. When the owner finds the animal in this condition it is often sold and in this way the infection is spread. The disease is due to a bacillus resembling the tubercle bacillus. A serum called "Johnin" is now being made at the hygienic laboratory for testing and disclosing affected animals. The manufacture of the serum is, however, a tedious and difficult process, as the bacillus is very slow of growth and is difficult to obtain uncontaminated with other bacilli.

Rabies

The control of rabies has shown very much progress. Thirty-eight outbreaks were reported during the last biennium and thirty-three outbreaks have been reported during this biennium. It is to be feared that the disease, which is due to filterable virus, has been inoculated into wild animals, possibly rats or skunks. The disease is fatal to man or beast, and people who have been bitten should resort to proper treatment immediately.

Blackleg

Blackleg is a disease which is caused by a germ found on low ground which is overflowed in the spring. The bacillus enters through a skin abrasion and its ravages may be prevented by vaccination. The disease rarely attacks animals over two years of age. It is generally fatal unless vaccination has been resorted to. The department received reports of fifteen scattered outbreaks.

Glanders

Glanders is a disease fatal to man, horses, mules and asses. Fortunately, it is of rare occurrence in our state. Only three outbreaks have been reported.

Hemorrhagic Septicemia

The bacillus causing hemorrhagic septicemia is present throughout the state. One hundred twenty outbreaks with two hundred sixty-eight deaths have been reported during this fiscal year. No preventive or curative remedy that can be depended upon has been discovered. The disease seems to appear suddenly and often disappears quickly after having claimed one or more victims.

Swamp Fever

Swamp fever is a disease which appears to attack only horses. It is fatal, although at times the patient seems to rally temporarily, but a recurrence may be looked for. The principal apparent symptom is a general weakness in spite of the fact that the appetite remains good almost to the last. Five outbreaks have been reported, although in certain sections quite a number of horses seem to be affected.

FEEDER AND STOCKER INDUSTRY

The term "feeder" includes all untested cattle shipped into the state for the purpose of converting feed and roughage into beef. By reason of the fact that they are held only a short period of time, an endeavor is made by the department to facilitate the movement of these cattle and their remaining on farms without contaminating the native cattle which have already been examined for tuberculosis. This effort is also made to prevent possible infection which will have to be paid for by the state in the way of indemnity in the future..

"Stockers" are another class of cattle sometimes confused with the feeders. Stockers are cattle which are shipped into the country to be kept a longer period of time for increasing the beef-producing animals and are generally kept for breeding purposes. Therefore, all such females and bulls must come under the provision of the tuberculin test.

The legitimate feeder is a person who is entitled to protection and encouragement in the production of meat. Like all other industries and professions, there are people in this industry who, under the ostensible purpose of shipping in feeders, are really endeavoring to ship untested cattle into the state and distribute them among the unsuspecting public. It is therefore our duty to try to prevent the illegitimate transaction of untested cattle in order to protect the public from being sold untested cattle in place of regularly inspected and tested cattle.

From January 1, 1922, to January 1, 1923, there were 16,536 head of cattle brought into this state. During this period an effort has been made by this division to place the owner of feeding cattle under an annual permit. This permit is for the purpose of ascertaining that there is in fact such a person residing within a certain district who is known to have premises upon which to place these cattle. No charge has been made for this permit and it can be had upon application. Blank applications will be furnished upon request. This annual permit is registered with the principal live stock exchanges in the middle west and the holder of such a permit may order his feeders by telegraphing the number of his permit and have his shipment come forward without any further expense or annoyance.

We ask the honest, legitimate feeder to cooperate with this department in apprehending all persons who endeavor to violate the technicality or spirit of this provision. We take this opportunity to thank those who have already extended their services in this way and will appreciate that cooperation in the future.

The main requirement for the holding of feeders without having them tested is that such untested cattle shall not be mingled with dairy or breeding cattle in that they shall not be allowed to run in the same pens or drink water from the same troughs with the native herd. Native feeder stock which is to be kept under the same provision, and to be handled in the future under the same class, may be mingled with these cattle.

A monthly report is required of the number of feeders on hand, or the number sold, if any.

The time will no doubt come when the tubercular animals will be sifted out of the feeder industry so as to eliminate the necessity of keeping such cattle segregated. Until that time, however, we ask the cooperation of the public to assist in keeping them separate.

REGULATIONS

Prohibiting the Shipment of Untested Cattle Into Clean Areas

Prohibiting the Transfer of Exposed Cattle Within the Same Areas

Order No. 1—1921

A Regulation to Prevent the Spread of Bovine Tuberculosis and Prohibiting the Dispersal of Cattle From Herds in Which Tuberculosis Has Been Found Except When Inspected as Herein Provided.

Whereas, all cattle in certain areas have been or will be tuberculin tested and examined for tuberculosis, and,

Whereas, there is danger that the further spread of tuberculosis will take place in said areas from transfer of cattle from one farm to another,

Therefore, I, C. P. Norgord, Commissioner of Agriculture, and Chairman of the Live Stock Sanitary Board, in accordance with Section 1492*ab*—5*R*, do hereby declare that whenever herds have been tested in these counties in accordance with this section, all herds in which no tuberculosis was disclosed on such county-wide tests or other tests, shall be declared as "free herds," from which animals may be transferred without restriction.

INFECTED HERDS. Definition (Herds in which tuberculosis has been disclosed).

Restriction: No animal which was part of any herd in which infection was revealed in tuberculin tests applied during the first area inspection or subsequent tests, shall be sold except for immediate slaughter, unless such herds or individual members of such herds, have passed a clean test subsequent to the test in which reactors were disclosed and subsequent to the removal of the reactors and disinfection of the premises.

Until such time as "infected herds" have passed such further tests and they can be declared as "free herds" all removals from such herds shall be subject to the approval of the State Veterinarian, Madison, Wis.

Penalties and Liabilities

Any person who shall violate any of the provisions of the above regulations shall be liable to any person injured thereby and punishable by a fine of not less than $20 nor more than $200, and is accumulative for each animal transferred contrary to this order.

Note:—For importation into these counties see Order No. 2, 1921.

Approved

C. P. NORGORD, *Commissioner of Agriculture.*
E. G. HASTINGS,
L. A. WRIGHT,
GEO. MCKERROW,
O. H. ELIASON, *Secretary.*
Members of the Wisconsin Live Stock Sanitary Board.

Dated, June 1, 1921.

Order No. 2—1921

Regulations to Prevent the Spread of Bovine Tuberculosis and Prohibiting the Shipment of Cattle Into Certain Districts Except When Inspected as Herein Provided.

Whereas, there is danger that the spread of tuberculosis will take place in tested areas from importation from other sections of the state when such animals are brought in without being properly examined and tuberculin tested.

Therefore, I, C. P. Norgord, Commissioner of Agriculture, and Chairman of the Live Stock Sanitary Board, in accordance with Section 1492*ab*—5*R*, do hereby order that no bovine animal shall be imported, shipped, trailed or otherwise brought into said counties or town except in accordance with regulations herein provided:

Regulations

SECTION I

Cattle Over Three Months Old.

No bovine animal over three months old shall be brought into or be permitted to enter any tested area or territory unless and except it be in conformity with the following regulations:

(a) Accredited Herds: Any member of an accredited herd may be shipped into any of said districts, provided that the number of the accredited herd certificate be written on the bill of lading, but if such animal is transported or moved by truck or otherwise, and there is no bill of lading, then the person in charge of the animal or who delivers the animal shall have in his possession and deliver to the consignee, vendee, or other person receiving the animal therein, a statement from the consignor or former owner giving the number of the accredited herd certificate and the name or other identifications of the animal. A similar statement shall be made to the State Veterinarian at Madison, Wis.

(b) Herds under Accredited Herd Supervision and having passed one clean test:

The owner of a herd under supervision which has passed one clean test and which has no previous history of tuberculosis, may receive a certificate for any individual animal in the herd from the Inspector in Charge of Accredited Herds, Madison, Wisconsin, for the purpose of shipment into the above named districts for a period of not to exceed one year after the date of such clean test. This certificate shall be made in triplicate. One copy shall be filed with the bill of lading, if shipped by rail, or, if otherwise delivered, shall be in the possession of the person transporting the same into these districts. A duplicate shall be furnished by the seller to the State Veterinarian, Madison, Wis., as required by paragraph (a). A triplicate copy shall be furnished to the consignee by the seller. The privileges under (a) and (b) do not obtain for herds under supervision which may have passed one clean test, but which have history of tuberculosis immediately before the last clean test.

SECTION II

Herds Not Under Joint Supervision and Tested by Local Veterinarians.

Individual animals coming from herds which are tested regularly by a local veterinarian, such veterinarian having been approved by the state and United States departments of agriculture for interstate inspection, or accredited herd testing, may be brought into the above described districts under the following provisions:

(a) Individuals from herds which have passed an entire herd test within one year and there being no history of tuberculosis in connection with the herd, and the members of such herd have not mingled with cattle that have not passed a tuberculin test, may be shipped or transferred into the above described area within a period not to exceed one year from the date of last test, provided copies of the last test on those individual animals are made in triplicate. One copy shall be filed with the bill of lading or person transporting the animal into the above described districts, a copy transmitted to the State Veterinarian, Madison, Wis., and a triplicate copy transmitted to the consignee.

(b) All cattle which do not conform to the above provisions must have been tested within sixty days prior to the shipment and the individual in question must not have commingled with untested cattle after the date of test. Certificates shall be made out as in paragraph (a) of this section.

If the veterinarian making the inspection has knowledge of the presence of tuberculosis in any herd from which such animals come, and if, in his opinion, the percentage of tuberculosis is too high to insure the health of the individual animal inspected, it shall be within his discretion to withhold certificates from such animals until he is assured that such animals will be kept in proper quarantine and subjected to further inspection at destination. All facts as to the presence of tuberculosis in herds from which individuals come, the number of cattle tested shall be designated on the test record.

SECTION III

Uninspected Cattle Shipped, Trailed or Otherwise Brought Into the Above Described Areas.

Where it is necessary to bring uninspected cattle into the above described area permission must first be obtained from the State Veterinarian. Notification of the arrival shall be given to the State Veterinarian the day that such animal is delivered by the transportation company, or other person bringing in such cattle. All such animals shall be in quarantine on the owner's premises separated from all other cattle until such animals may be inspected by an authorized veterinarian at the expense of the owner.

SECTION IV

Untested Calves.

(a) Calves from accredited herds may be brought into the above described area without restriction.

(b) All other shipments of calves unless tested and shipped under health certificate, as provided for mature animals, shall be reported by the consignee to the State Veterinarian, Madison, Wis., immediately upon shipment and shall give the name and address of the consignee. Such calves shall be kept in isolation from all other cattle on the premises until they are duly tested at the expense of the owner.

SECTION V

Authorized Inspectors.

(a) Veterinarians employed by either state or federal departments.

(b) Local veterinarians who have been authorized to inspect for interstate shipments or for accredited herds are hereby authorized to inspect for shipments into the above described districts.

All veterinarians are hereby instructed to mail promptly a copy of the record of inspection to the State Veterinarian if importations are made into any of the above named districts.

Records of such inspections, if made at a point within the state, shall be recorded on the regular test record blanks made out in triplicate, as above described.

SECTION VI

Regulations Affecting Railroads and Common Carriers.

Railroads and other common carriers are hereby ordered not to accept any bovine for shipment into these areas except when accompanied by a certificate as herein required and signed by an authorized veterinarian. A copy of such certificate shall be attached to the bill of lading and shall be filed in the office of the unloading station for a period of at least six months.

SECTION VII

Penalty and Liabilities.

Any person who shall violate any of the provisions of the above regulations shall be liable to the person injured thereby and in addition thereto shall forfeit to the state not less than $20 nor more than $200, and each animal moved or transported contrary to these regulations shall constitute a separate and distinct violation.

Approved

C. P. NORGORD, *Commissioner of Agriculture.*
E. G. HASTINGS,
L. A. WRIGHT,
GEO. MCKERROW,
O. H. ELIASON, *Secretary.*
Members of the Wisconsin Live Stock Sanitary Board.

Dated, June 1, 1921.

The work provided for under the area test law, Chapter 167, laws of 1921, can be secured only by filing a petition representing at least 65 per cent of the cattle owners within the area where the work is contemplated, with the Department of Agriculture, State Capitol, Madison. The object of petitioning is in a large measure to ascertain if a large part of the stock owners of a given county or territory are in favor of eradicating tuberculosis from their herds and to inform the department whether or not proper cooperation from the herd owners can be secured within the area in question.

TUBERCULIN TEST REGULATIONS

Cattle which may be exhibited at the Wisconsin State Fair:

1. From Accredited Herds.
2. From herds with no previous history of tuberculosis, which have passed an entire herd test within one year and which have not commingled with cattle other than those having passed the tuberculin test.
3. From herds having reactors on the first test and having passed a subsequent entire herd test within six months of the removal of the reactors from the herd.
4. Owners of animals from herds not tested in their entirety must furnish tuberculin test charts on individual animals, date of test not to exceed 90 days prior to closing date for entries, August 10. The owner of such cattle shall furnish a certified statement that the cattle offered for exhibition have not commingled with untested cattle dating from the time indicated on the test chart furnished. All test charts must be on official forms and approved by the state or federal officials. Test charts properly approved shall be attached to entry blanks, and furnished to the secretary of the fair not less than 20 days before the opening of the fair. Animals exhibited shall be identified on tuberculin test charts by name and registry number, or ear tag number.

5. Owners of herds under state-federal supervision, which come within classes 1, 2 and 3, will be furnished necessary tuberculin test charts upon application to the state or federal officials.

6. Public or common water troughs are forbidden. Each exhibitor shall provide water buckets to be used for his stock only.

7. The herdsman, or man in charge of the exhibit, should provide himself with a properly approved test chart (not to be surrendered) to be shown to the proper officials on demand and from which necessary transcripts may be prepared.

8. The above provisions apply to all cattle brought upon the Wisconsin State Fair grounds for exhibition or other purposes.

9. The Live Stock Sanitary Board urges the necessity of all exhibitors thoroughly cleaning and disinfecting cars which are to be used to transport their cattle to and from the state fair. The cattle should have room enough to be fed and watered in transit, and they should not be unloaded and left in stock yards during transit, or loading and unloading. Stock yards and stock cars are exposed premises.

TABLE I—NUMBER OF CATTLE TESTED FOR TUBERCULOSIS

July 1, 1920, to July 1, 1921

County	No. Tested	No. Reactors	No. Suspects	Herds	
				Clean	Infected
Adams	182	1	0	6	0
Ashland	191	3	0	5	1
Barron	50,760	454	12	2,120	205
Bayfield	4,852	46	0	179	12
Brown	634	12	0	15	4
Buffalo	1,094	17	10	23	10
Burnett	180	1	0	8	1
Calumet	3,808	131	8	118	64
Chippewa	12,135	142	5	468	32
Clark	1,785	33	8	44	17
Columbia	1,681	53	9	40	19
Crawford	256	2	0	4	2
Dane	6,894	498	36	155	119
Dodge	4,434	263	26	78	55
Door	7,446	254	5	287	100
Douglas	564	1	0	15	1
Dunn	1,514	16	3	30	10
Eau Claire	1,556	30	5	51	12
Florence	79	2	1	1	1
Fond du Lac	3,187	158	16	42	29
Forest	68	0	0	3	0
Grant	3,180	147	0	59	40
Green	9,649	662	59	95	143
Green Lake	281	6	1	5	2
Iowa	1,724	44	6	30	20
Iron	0	0	0	0	0
Jackson	710	24	0	21	7
Jefferson	8,727	615	64	150	131
Juneau	1,231	24	6	34	14
Kenosha	722	66	0	12	10
Kewaunee	79	4	1	3	2
La Crosse	6,548	148	23	198	49
Lafayette	540	11	1	11	7
Langlade	505	3	0	19	3
Lincoln	20,488	188	4	830	74
Manitowoc	2,144	51	12	28	16
Marathon	6,172	102	1	220	61
Marinette	297	13	1	5	3
Marquette	178	2	0	5	1
Milwaukee	882	44	1	20	12
Monroe	2,977	45	14	100	23
Oconto	509	18	3	10	9
Oneida	248	12	0	6	1
Outagamie	3,545	71	2	120	35
Ozaukee	666	60	26	17	8
Pepin	187	2	1	6	2
Pierce	1,043	21	3	32	10
Polk	1,507	35	2	49	14
Portage	1,248	30	33	35	22
Price	4	1	0	0	0
Racine	1,190	151	4	13	26
Richland	3,205	58	10	82	29
Rock	5,620	697	77	71	115
Rusk	421	21	0	15	5
Saint Croix	3,054	117	14	62	41
Sauk	2,618	136	3	66	35
Sawyer	1,258	44	0	27	2
Shawano	585	16	0	15	6
Sheboygan	5,584	240	14	157	59
Taylor	266	3	6	11	2
Trempealeau	633	29	0	17	5
Vernon	1,705	17	3	53	14
Vilas	22	0	0	1	0
Walworth	7,157	811	40	117	123
Washburn	107	61	1	0	3
Washington	1,244	25	5	28	14
Waukesha	9,042	325	33	168	93
Waupaca	6,153	140	16	213	54
Waushara	244	5	2	9	3
Winnebago	4,910	126	12	140	52
Wood	1,825	42	2	48	20
Total	236,134	7,630	650	7,125	2,107

TABLE II—NUMBER OF CATTLE TESTED FOR TUBERCULOSIS

July 1, 1921, to July 1, 1922

County	No. Tested	No. Reactors	No. Suspects	Herds	
				Clean	Infected
Adams	97	1	0	2	1
Ashland	9,249	158	2	354	71
Barron	16,222	264	14	628	131
Bayfield	10,489	74	5	363	22
Brown	1,239	102	0	23	9
Buffalo	3,688	70	2	92	39
Burnett	290	21	1	5	8
Calumet	2,141	43	6	75	20
Chippewa	26,323	386	10	967	151
Clark	6,758	334	10	177	91
Columbia	1,650	76	0	41	21
Crawford	992	113	2	24	11
Dane	14,143	968	34	269	240
Dodge	5,796	320	7	106	85
Door	326	13	0	5	4
Douglas	5,367	45	0	198	19
Dunn	2,230	43	0	57	12
Eau Claire	1,849	42	2	58	14
Florence	0	0	0	0	0
Fond du Lac	4,092	358	13	60	68
Forest	24	1	0	0	0
Grant	3,879	124	6	68	52
Green	9,305	759	17	117	134
Green Lake	357	18	0	9	5
Iowa	2,658	123	3	46	36
Iron	24	0	0	1	0
Jackson	1,722	50	2	51	14
Jefferson	10,623	800	23	167	175
Juneau	1,381	25	10	43	19
Kenosha	1,392	189	4	13	30
Kawaunee	188	8	0	5	2
La Crosse	6,791	146	7	238	37
Lafayette	720	29	1	15	8
Langlade	354	9	1	9	5
Lincoln	916	15	0	34	6
Manitowoc	1,618	37	8	48	16
Marathon	7,223	258	6	194	119
Marinette	1,250	45	7	33	21
Marquette	255	10	2	4	4
Milwaukee	1,336	48	7	28	9
Monroe	4,067	80	21	114	44
Oconto	1,432	62	4	34	25
Oneida	2,897	64	5	76	23
Outagamie	6,488	357	2	189	102
Ozaukee	649	26	3	12	11
Pepin	519	16	4	14	9
Pierce	1,991	75	1	65	15
Polk	698	20	0	22	7
Portage	4,446	104	8	151	59
Price	31	0	0	2	0
Racine	2,597	463	8	40	44
Richland	2,473	78	13	47	28
Rock	10,075	1,438	66	126	234
Rusk	962	50	1	28	19
Saint Croix	6,447	195	2	177	57
Sauk	3,256	94	6	97	30
Sawyer	198	2	0	1	1
Shawano	1,270	55	0	32	16
Sheboygan	5,795	105	20	160	73
Taylor	704	16	1	25	7
Trempealeau	2,438	195	12	63	35
Vernon	3,042	32	0	98	22
Vilas	0	0	0	0	0
Walworth	10,637	1,216	62	160	200
Washburn	7,940	219	2	239	83
Washington	2,447	54	9	73	32
Waukesha	12,299	536	38	266	123
Waupaca	7,845	214	17	223	116
Waushara	789	49	4	23	17
Winnebago	4,033	195	0	97	59
Wood	4,878	333	13	105	94
Total	278,300	12,578	534	7,886	3,295

TABLE III—RECORD OF TUBERCULIN TESTING COOPERATIVE TUBERCULOSIS ERADICATION WORK

Fiscal Year, 1922

State	Herds Tested	Cattle Tested	Reactors Found	Per Cent Reacted
Alabama	861	25,647	164	.6
Arizona	----------	----------	----------	----------
Arkansas	57	1,991	36	1.8
California	171	4,867	146	3
Colorado	23	993	49	4.9
Connecticut	1,013	22,738	4,127	18.2
Delaware	1,364	10,542	1,064	10.1
District of Columbia	52	850	4	.5
Florida	1,791	23,850	302	1.3
Georgia	781	19,544	275	1.4
Idaho	3,383	40,232	406	1
Illinois	4,155	51,552	3,033	5.9
Indiana	9,464	101,476	3,329	3.3
Iowa	5,874	118,467	6,738	5.7
Kansas	1,693	36,074	801	2.2
Kentucky	5,555	45,152	1,072	2.4
Louisiana	497	13,191	325	2.5
Maine	5,323	39,552	838	2.1
Maryland	3,157	38,656	3,430	8.9
Massachusetts	335	9,855	505	5.1
Michigan	16,787	158,853	5,419	3.4
Minnesota	4,484	97,465	2,492	2.6
Mississippi	2,327	22,774	177	.8
Missouri	18,967	197,979	2,005	1
Montana	7,126	105,743	1,054	1
Nebraska	11,132	148,561	4,149	2.8
Nevada	877	9,441	288	3.1
New Hampshire	908	14,206	1,373	9.7
New Jersey	706	19,606	1,292	6.6
New Mexico	914	6,723	64	1
New York	6,123	106,826	11,900	11.1
North Carolina	20,180	69,599	750	1.1
North Dakota	3,771	69,819	1,828	2.6
Ohio	2,823	46,579	1,822	3.9
Oklahoma	1,230	36,156	950	2.6
Oregon	8,666	67,689	1,144	1.7
Pennsylvania	3,603	56,564	2,853	5
Rhode Island	62	1,749	92	5.3
South Carolina	886	20,816	254	1.2
South Dakota	753	19,569	691	3.5
Tennessee	5,316	53,502	383	.7
Texas	321	26,138	549	2.1
Utah	4,887	25,849	284	1.1
Vermont	3,916	69,982	4,911	7
Virginia	2,901	49,372	1,759	3.6
Washington	8,628	83,645	1,857	2.2
West Virginia	1,898	20,781	418	2
Wisconsin	6,973	149,441	4,983	3.3
Wyoming	2,506	23,080	184	.8
Total	195,220	2,384,236	82,569	3.5

TABLE IV—INDEMNITY BY COUNTIES, 1921-1922

County	Local Veterinarians	Accredited Herds	Area	Total
Adams				
Ashland			$748.92	$748.92
Barron	$98.24	$3,153.80	1,509.72	4,761.76
Bayfield			1,197.31	1,197.31
Brown	4,176.63	331.92		4,508.55
Buffalo	707.59	698.46		1,406.05
Burnett				
Calumet	647.03	364.58		1,011.61
Chippewa	950.13	1,486.51		2,436.64
Clark	7,004.46	2,015.72		9,020.18
Columbia	2,359.20	779.36		3,138.56
Crawford		1,350.22		1,350.22
Dane	24,775.25	5,693.81		30,469.06
Dodge	8,813.10	5,517.79		14,330.89
Door	150.75	360.00	26.80	537.55
Douglas			141.98	141.98
Dunn	944.49	185.55		1,130.04
Eau Claire	1,071.73	118.34		1,190.07
Florence				
Fond du Lac	14,572.41	1,844.44		16,416.85
Forest	40.00			40.00
Grant	1,498.65	1,947.19		3,445.84
Green	22,507.43	8,611.14		31,118.57
Green Lake	3,112.84	40.25		3,153.09
Iowa	1,411.27	1,819.14		3,230.41
Iron				
Jackson	1,465.03	253.99		1,719.02
Jefferson	11,038.84	3,670.83		14,709.67
Juneau	1,352.30	344.57		1,696.87
Kenosha	2,228.23	1,437.00		3,665.23
Kawaunee	194.24			194.24
La Crosse	1,439.27	1,521.59		2,960.86
Lafayette	1,249.48	170.00		1,419.48
Langlade		135.99		135.99
Lincoln			1,149.33	1,149.33
Manitowoc	1,774.18	213.38		1,987.56
Marathon	2,557.02	3,521.38		6,078.40
Marinette	1,229.54	43.88		1,273.42
Marquette	19.85	20.00		39.85
Milwaukee	2,499.50	880.25		3,379.75
Monroe	1,886.13	478.26		2,364.39
Oconto	1,061.79	291.70		1,353.49
Oneida			544.22	544.22
Outagamie	1,400.96	330.00		1,730.96
Ozaukee	2,529.58			2,529.58
Pepin		333.72		333.72
Pierce	1,019.16	1,286.34		2,305.50
Polk	756.53	250.00		1,006.53
Portage	807.04	1,652.17		2,459.21
Price				
Racine	3,944.49	3,244.61		7,189.10
Richland	355.35	1,264.85		1,620.20
Rock	27,620.25	10,254.70		37,874.95
Rusk	1,051.53	415.25		1,466.78
Saint Croix	1,648.86	1,864.98		3,513.84
Sauk	2,804.83	661.82		3,466.65
Sawyer	735.66			735.66
Shawano		452.12		452.12
Sheboygan	5,707.64	2,788.08		8,495.72
Taylor	36.45	243.34		279.79
Trempealeau	4,246.19	1,058.26		5,304.45
Vernon	2,076.90	706.60		2,783.50
Vilas				
Walworth	23,231.72	20,300.96		43,532.68
Washburn			1,809.65	1,809.65
Washington	1,463.43	1,009.35		2,472.78
Waukesha	10,121.52	4,138.88		14,260.40
Waupaca	607.46	3,093.85		3,701.31
Waushara	2,275.82	144.30		2,420.12
Winnebago	531.31	2,589.23		3,120.54
Wood	3,032.29	3,880.94		6,913.23
Total	$222,841.57	$111,265.39	$7,127.93	$341,234.89

TABLE V—STATEMENT OF INDEMNITY CLAIMS AND AVERAGES IN COOPERATIVE TUBERCULOSIS ERADICATION WORK, FISCAL YEAR 1922

Includes claims received up to August 1, 1922. In some states a number of claims have not been forwarded.

State	No. Claims	No. Cattle	% Pure Bred	Average Appraisal	Average Salvage	Average State Indemnity	Average Federal Indemnity
Alaska	11	25	0	$167.60	$19.67	$53.41	$24.22
Colorado	7	31	84	437.10	26.07	45.68	45.68
Connecticut	370	3,172	15	60.85	16.38	29.10	14.82
Delaware	184	916	15	99.46	13.77	38.06	21.63
Florida	87	263	9	28.64	12.93	10.47	5.14
Hawaii	47	88	2	216.25	49.43	118.48	22.74
Idaho	206	370	11	90.09	19.92	20.86	20.86
Illinois	626	1,883	45	138.01	25.19	32.52	32.52
Indiana	953	2,890	23	107.03	20.74	27.09	22.90
Iowa	1,412	5,078	30	128.17	19.72	29.31	25.40
*Kansas	353	604	63	137.73	23.32	64.62	29.09
Kentucky	393	890	11	88.97	11.64	49.92	19.48
*Maine	403	801	18	97.13	10.69	61.88	22.15
Maryland	428	1,571	11	81.38	13.59	22.51	22.51
Massachusetts	12	43	12	124.30	.22	58.72	22.61
Michigan	1,939	4,282	26	87.48	16.24	43.71	21.16
Minnesota	727	2,216	21	56.27	18.11	25.17	12.70
Mississippi	45	95	20	60.37	7.96	29.16	16.20
Missouri	548	1,698	22	115.97	23.96	23.65	23.65
*Montana	413	800	7	64.92	7.31	45.05	18.76
Nebraska	954	1,955	17	90.54	21.85	19.49	19.49
Nevada	97	296	4	75.18	11.03	39.77	23.91
New Hampshire	203	940	25	105.66	17.08	42.23	22.09
New Jersey	242	1,093	46	287.52	23.87	63.84	35.83
New Mexico	40	74	5	45.66	----------	16.23	16.23
New York	1,010	5,905	53	145.13	15.10	76.26	33.22
North Carolina	269	461	13	121.18	19.03	22.73	22.73
North Dakota	572	1,333	14	46.87	15.87	10.33	10.33
Ohio	435	1,203	59	135.11	26.94	33.97	33.97
Oklahoma	101	377	44	115.96	10.00	52.36	28.60
Oregon	294	622	18	112.39	15.37	26.15	26.14
Pennsylvania	90	387	41	191.92	20.47	51.76	34.27
Rhode Island	22	92	54	192.88	29.16	68.33	34.48
South Carolina	102	221	22	63.38	18.00	15.13	15.13
South Dakota	178	642	41	137.69	20.91	33.59	24.66
Tennessee	8	46	98	255.43	21.14	93.29	45.34
Texas	101	454	50	198.22	17.85	35.66	35.42
Utah	222	297	29	103.12	12.32	20.79	20.79
Vermont	829	3,679	17	76.53	11.71	21.27	21.27
West Virginia	123	367	15	81.46	9.31	44.80	22.50
Virginia	200	616	16	119.02	14.40	34.15	26.19
Washington	509	1,356	11	124.59	22.70	23.37	23.37
Wisconsin	1,464	4.264	30	133.38	17.73	24.32	23.87
Wyoming	122	159	3	108.07	13.78	25.05	22.88
Totals	17,351	54,555	27%	$110.90	$17.55	$36.42	$23.76

* Note: Salvage paid to state.

TABLE VI—CATTLE SHIPPED OUT OF WISCONSIN

July 1, 1920, to July 1, 1921

Alabama	55	Missouri	371
Arizona	117	Montana	169
Arkansas	15	Nebraska	375
California	106	New Jersey	6
Canada	18	New Mexico	10
Colorado	145	New York	427
Connecticut	5	North Carolina	1
Delaware	21	North Dakota	118
Florida	40	Ohio	138
Georgia	19	Oklahoma	153
Idaho	24	Pennsylvania	48
Illinois	6,572	South Carolina	5
Indiana	287	South America	31
Iowa	1,895	South Dakota	254
Kansas	403	Tennessee	76
Kentucky	79	Texas	231
Louisiana	229	Utah	24
Maryland	149	Vermont	1
Massachusetts	7	Virginia	2
Mexico	2,130	Washington	3
Michigan	361	Wyoming	221
Minnesota	1,744		
Mississippi	9	Total Shipped Out of Wisconsin	17,094

TABLE VII—CATTLE SHIPPED OUT OF WISCONSIN

July 1, 1921, to July 1, 1922

Alabama	6	Montana	327
Arizona	146	Nebraska	1,571
Arkansas	13	Nevada	122
Bermuda Islands	8	New Jersey	34
California	1,400	New Mexico	25
Canada	37	New York	1,682
Colorado	489	North Carolina	42
Connecticut	1,021	North Dakota	671
Florida	61	Ohio	237
Georgia	488	Oklahoma	51
Hawaiian Islands	10	Oregon	4
Idaho	480	Pennsylvania	211
Illinois	8,136	Rhode Island	5
India	8	South America	8
Indiana	731	South Carolina	2
Iowa	5,379	South Dakota	893
Japan	4	Tennessee	40
Kansas	723	Texas	160
Kentucky	114	Utah	30
Louisiana	860	Virginia	618
Maryland	624	Washington	66
Massachusetts	34	West Virginia	80
Mexico	2,751	Wyoming	169
Michigan	262		
Minnesota	2,989		
Missouri	718	Total Shipped Out of Wisconsin	34,051
Mississippi	11		

TABLE VIII—CATTLE SHIPPED INTO WISCONSIN FROM OTHER STATES

July 1, 1920, to July 1, 1921

Arkansas	1	Nebraska	15
California	4	New Hampshire	15
Canada	1	New Jersey	3
Colorado	56	North Dakota	191
Delaware	1	New York	136
Florida	38	Ohio	87
Idaho	4	Oklahoma	1
Illinois	595	Pennsylvania	36
Indiana	24	Rhode Island	1
Iowa	394	South Dakota	96
Kansas	5	Tennessee	1
Kentucky	4	Texas	19
Maine	19	Vermont	17
Maryland	1	Virginia	1
Massachusetts	20	Washington	78
Michigan	86	West Virginia	1
Minnesota	2,831	Wyoming	2
Missouri	19		
Montana	69	Total Number Shipped In	4,872

TABLE IX—CATTLE SHIPPED INTO WISCONSIN FROM OTHER STATES, 1921-1922

Canada	1	Missouri	3
Colorado	18	Nebraska	29
Delaware	1	New Jersey	4
Illinois	359	New York	41
Indiana	47	North Dakota	95
Iowa	251	Ohio	11
Kansas	2	Oregon	2
Kentucky	4	South Dakota	33
Maine	1	Texas	9
Maryland	1	Vermont	3
Massachusetts	8	Virginia	1
Michigan	143	Pennsylvania	4
Minnesota	2,004	Washington	23
Mississippi	23		
Montana	28	Total	3,149

TABLE X—SHOWING NUMBER OF CATTLE TESTED, NUMBER AND PER CENT OF REACTORS, AND ESTIMATED COST OF TESTING UNDER THE AREA PLAN

County	No. Cattle Tested	No. of Reactors	Per Cent Reactors	Estimated Cost of Testing Per Head	Operating Cost
Ashland	11,922	214	2	.48c	$5,722.56
Barron	67,000	400	.6	.31½c	21,105.00
Bayfield	14,217	100	.7	.47c	6,681.99
Chippewa	68,042	1,105	1.6	.25c	17,010.50
Douglas	14,266	93	.65	.44c	6,277.04
Eau Claire	32,680	503	1.5	.21c	6,862.80
Iron	4,882	36	.7	.50c	2,441.00
Lincoln	20,475	188	.9	.34c	6,961.50
Oneida	7,200	210	3	.49c	3,528.00
Price	18,054	106	.6	.21c	3,791.34
Rusk	21,962	269	1.2	.26c	5,710.12
Sawyer	5,976	41	.6	.27c	1,613.52
Vilas	2,920	9	.3	.41c	1,197.20
Washburn	14,360	489	3	.42c	6,031.20
Washington Island	1,366	40	3	.39c	532.74
Waukesha	36,996	2,219	6	.56c	20,717.76

DIVISION OF SEED AND WEED CONTROL

A. L. STONE, *Director*

Seed Control in General

The biennium beginning July 1, 1920, and ending June 30, 1922, was a period of almost unprecedented activity on the part of the divisional staff. The seed control work has been pushed with more than usual vigor. During the war period the prices on seeds mounted until there was a great temptation for seedsmen to indulge in speculative trading among themselves, which pushed prices to almost a prohibitive point. As a fact, there were certain classes of seeds which farmers refused to buy. Among these were clover, timothy, and, to some extent, alfalfa seeds. Much as they needed them to keep up their meadows and to maintain their crop rotations, farmers were convinced there was no just cause for the extremely high prices for the above named seeds and used substitutes, soy beans in particular.

The high prices also resulted in bringing onto the markets everything which by any stretch of imagination could be called seeds. Some of these were of such poor quality or so badly infested with weed seeds, noxious and otherwise, that it was a crime to sell them. Mixed with a quantity of seed of a better grade it could be disposed of to farmers without much fear of its being detected. These conditions have persisted to some degree for the last biennium, although the markets are slowly approaching a normal, though not a pre-war basis.

Three circumstances and conditions have made the work of inspection of great importance and the divisional inspectors have worked unremittingly to check up on all seed shipments put on the Wisconsin market.

Weed Control in General

During the war period a very large majority of the young manhood was withdrawn from the farms for army service. Many of those who went never returned to the farms, but remained in the cities. While conditions are now somewhat improved, normalcy as compared with pre-war conditions has not returned; farm labor is still scarce and high priced. This has had a marked effect on the efforts of this division to obtain enforcement of the weed control law. It is with great reluctance that a short-handed farmer takes time to destroy noxious weeds, especially if it involves possible neglect and loss of his crop. Nevertheless, much has been accomplished in an educational way, as well as in the actual destruction of weeds.

Work of Seed Laboratory

As noted in the last biennial report the samples analyzed in the laboratory fall into three classes. In the first are included the samples collected by the official inspectors and which are analyzed as a part of the official inspection. In the second class are included those samples sent in by sellers of seeds, including dealers and farmers. The third class of samples consists of those sent in by persons who have purchased or intend to purchase the seed and who wish to know something about its quality before using it. As these samples of the third class represent lots of seed which are not offered for sale and the tests are made for information only, no charge is made for the tests.

TABLE NO. I—SHOWING NUMBER OF SAMPLES OF FIELD SEEDS RECEIVED 1920-1921, GIVING AVERAGE PURITY AND GERMINATION

Kind of Seed	No. of Samples	Average Purity	Average Germination
Alfalfa	88	97.5	84
Barley	59	99.1	96
Beet			
Mangel	1	------------	216
Sugar	1	99.5	141
Broom Corn	2	98.6	68
Buckwheat	13	69.5	93
Clover			
Alsike	395	88.8	85
Mammoth	85	95.9	87
Medium	1,066	95.7	81
Sweet	25	98.8	79
White	11	91.5	77
Corn—Field	106	99.8	93
Cow Peas	1	98.4	45
Feterita	1	94.9	95
Flax	5	98.0	86
Grass			
Canada Blue	3	94.8	69
Creeping Bent	1	95.0	88
English Rye	1	------------	75
Italian Rye	2	99.5	74
Kentucky Blue	6	87.5	62
Orchard	3	99.0	64
Pacey's Rye	1	99.6	78
Red Top	5	91.1	77
Rough Stalk Meadow	1	98.5	61
Sudan	5	96.4	78
Hemp	507	94.4	57
Kafir Corn	1	98.9	70
Millet	23	98.0	87
Milo Maize	1	97.8	90
Mixed	129	95.5	85
Oats	144	99.0	94
Peas—Field	16	94.7	91
Rape	15	98.3	94
Rye	18	99.0	93
Sorghum	26	98.9	77
Soy Beans	100	97.8	88
Splitz	2	99.5	------------
Sunflower	1	99.7	94
Timothy	308	95.4	93
Tobacco	18	98.8	91
Vetch	3	99.4	72
Wheat	37	99.4	91

Free Tests	500
Condemned Lots	131

TABLE NO. II—SHOWING NUMBER OF SAMPLES OF FIELD SEEDS RECEIVED 1921-1922, GIVING AVERAGE PURITY AND GERMINATION

Kind of Seed	No. of Samples	Average Purity	Average Germination
Alfalfa	219	97.3	78
Barley	60	98.3	96
Beet			
Mangel	8	99.8	92
Buckwheat	17	74.6	91
Clover			
Alsike	308	92.4	87
Hubam	7	96.7	83
Mammoth	97	97.1	90
Medium	975	95.8	87
Sweet—White Blossom	25	97.9	74
Sweet—Yellow Blossom	1	98.9	88
White	10	94.2	72
Corn—Field	219	99.7	87
Cow Peas	2	97.6	44
Feterita	1	84.7	97
Flax	6	98.8	93
Grass			
Canada Blue	1	94.6	32
English Rye	1	99.8	98
Kentucky Blue	2	81.2	54
Orchard	2	99.1	45
Pacey's Rye	1	99.8	75
Red Fescue	1	98.0	----------
Red Top	1	97.5	51
Hemp	54	98.2	94
Kafir Corn	1	91.8	85
Millet			
Common	12	96.0	88
Golden	2	97.4	91
German	3	97.1	72
Hog	22	98.5	88
Japanese	35	99.1	85
White Wonder	2	99.2	89
Milo Maize	1	97.8	92
Mixed	74	94.7	85
Oats	258	98.8	95
Peas—Field	16	95.5	90
Rape	6	97.5	94
Rye	28	98.9	89
Sorghum	5	98.4	73
Soy Beans	66	98.3	86
Sudan Grass	16	98.4	77
Sunflower	2	99.6	93
Timothy	532	98.3	93
Tobacco	42	99.2	92
Vetch	2	99.6	62
Wheat	44	99.5	90

Free Tests	737
Condemned Lots	145

In 1920-21 the inspectors collected 479 samples from 394 dealers in 150 towns. Three thousand one hundred fifty-two samples were sent in by dealers and farmers for test prior to sale, and 488 samples were sent for free analysis by farmers and dealers. Altogether there were 4,119 samples of seed analyzed during the year. Fifteen lots of seed were ordered off the market by the inspectors because they did not meet the requirements of the law. Of the lots represented by the samples voluntarily sent in by dealers and farmers, 116 were condemned and permission to sell them in Wisconsin refused unless recleaned to conform to the legal requirements.

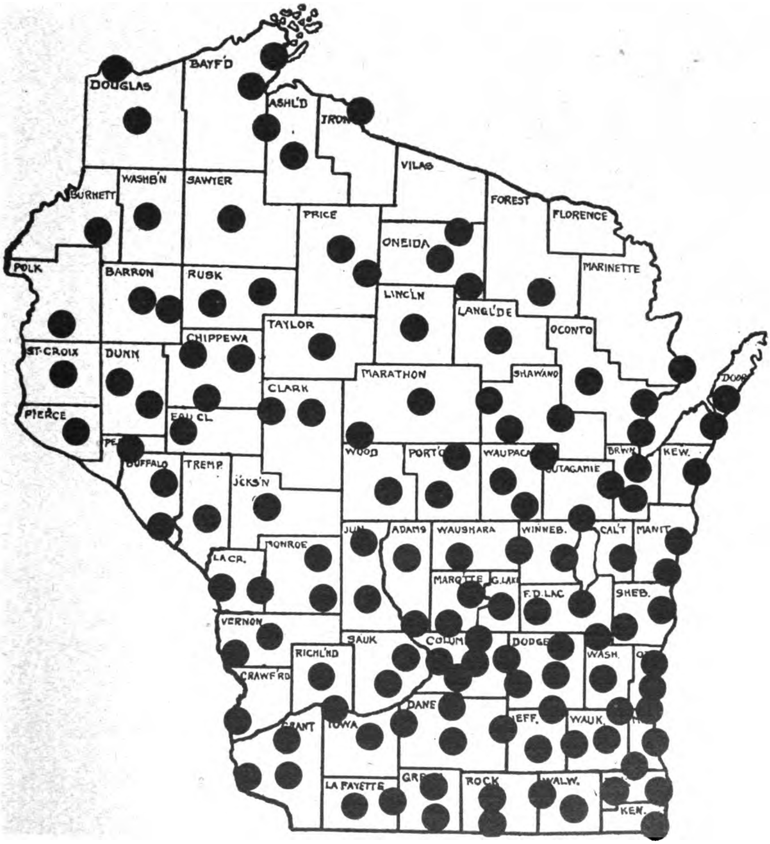
Second Year's Laboratory Work

During 1921 and 1922 4,549 samples were received. The inspectors collected samples from 592 lots of seed offered for sale by 405 dealers in 136 towns. The sale of fourteen of these was prohibited because they contained noxious weed seeds. Of the remaining 3,957 lots 131 were found unfit for sale in Wisconsin and ordered off the market.

Laboratory Record for Biennium

During the two years of the biennium inspectors collected samples from 1,071 lots of seed from 799 dealers in 286 towns and cities. Farmers and dealers voluntarily sent in 8,076 samples. A total of 8,668 samples of seed were analyzed in the laboratory in the little more than six months of the seed selling seasons of the two years. Of these, 276 lots were condemned.

These lots of crop seeds are condemned because they contain the noxious weed seeds in greater proportion than one weed seed to three thousand of the crop seeds. Of the lots condemned in 1920-21, 48 con-



Map No. 1.—Showing the location of the towns visited by the seed inspectors during the biennium. They are well distributed so that all sections of the state feel the effect of the inspection.

tained buckhorn, 36 Canada thistle, 22 field dodder, 10 wild oats, 8 wild mustard, 7 quack grass, 7 ox-eye daisy, 3 Indian mustard, 2 corn cockle, and 2 alfalfa dodder seeds.

In 1921-22, 45 contained wild oats, 38 buckhorn, 33 Canada thistle, 25 quack grass, 11 corn cockle, 9 wild mustard, 5 alfalfa dodder, 3 Indian mustard, 2 field dodder, and 1 ox-eye daisy seeds. In both years there were several lots which contained two or more kinds of noxious weed seeds.

In many instances this condemned seed is recleaned until it is legally salable. In other cases it is shipped outside the state, or in the case of small grains, is used for feed. Occasionally very bad lots are burned.

Value of the Inspection

Had these condemned lots, constituting several thousand bushels of seed, been sown on farms in Wisconsin, it would have added tremendously to our already too serious weed problem. In several instances, dealers who have unknowingly sold seed which was either poor in vitality or contained noxious weed seeds, have been required to recall the seed from the farmers to whom it had been sold, and to replace it with better seed or refund the farmers' money so they could buy elsewhere.

The importance of the counties agriculturally is indicated by the number of lots of seed tested for each county. These are shown in Table No. III below:

TABLE NO. III—SHOWING NUMBER OF SAMPLES RECEIVED FROM EACH COUNTY DURING THE BIENNIUM

Adams	21	Marathon	134
Ashland	102	Marinette	40
Barron	184	Marquette	41
Bayfield	43	Milwaukee	94
Brown	149	Monroe	83
Buffalo	52	Oconto	17
Burnett	27	Oneida	13
Calumet	61	Outagamie	98
Chippewa	158	Ozaukee	27
Clark	132	Pepin	39
Columbia	300	Pierce	64
Crawford	37	Polk	133
Dane	1,719	Portage	32
Dodge	113	Price	17
Door	27	Racine	28
Douglas	41	Richland	32
Dunn	47	Rock	127
Eau Claire	119	Rusk	81
Florence	3	St. Croix	98
Fond du Lac	182	Sauk	146
Forest	12	Sawyer	19
Grant	134	Shawano	24
Green	136	Sheboygan	145
Green Lake	160	Taylor	42
Iowa	96	Trempealeau	66
Iron	7	Vernon	98
Jackson	102	Vilas	4
Jefferson	130	Walworth	110
Juneau	105	Washburn	125
Kenosha	2	Washington	48
Kewaunee	28	Waukesha	58
La Crosse	67	Waupaca	97
La Fayette	79	Waushara	45
Langlade	6	Winnebago	102
Lincoln	15	Wood	101
Manitowoc	63		

NUMBER OF SAMPLES RECEIVED FROM OTHER STATES

California	6	Minnesota	12
Connecticut	1	Missouri	8
Illinois	153	Montana	8
Iowa	1	Virginia	2
Michigan	6		

How Farmers Are Safeguarded

One dealer sold an entire carload of oats for seed purposes. The oats were bright, plump and of fine appearance, but for some reason failed to germinate.

This carload of oats was purchased by the dealer late in the season and farmers were waiting for the oats to seed fields already prepared. The oats were all out of the car—many of them sown—within forty-eight hours after arrival. The dealer did not take time to make a germination test, but sold the oats on their appearance only, a very unsafe, and, in this case, costly procedure.

These oats, in many cases, were used as a nurse crop for clover and timothy seeding. It was necessary for the farmers using them to prepare the field again and reseed it. The dealer supplied each farmer, not only with enough good seed oats to replace those which failed to grow, but with the necessary clover and grass seed to reseed the fields.

Farmers Use Impure Seed

Complaints are now being received from farmers that their fields have been infested with noxious weeds because the weed seeds were contained in the seeds they purchased. There is no doubt that impure seed is being used by many farmers, but if so, there is no one but themselves to blame. They have only to examine the labels, required by law to be attached to the seed containers, to know whether they contain noxious or other weed seeds or are low in vitality.

If the farmer takes as much care to examine the label as this division does to see that it is there for examination, he is practically assured of getting the kind of seed he wishes to buy.

Some Farmers Short-Sighted

Seed cleaners report that in many sections of the state farmers bring their seed in to be cleaned, sell the clean seed, and take the screenings home for use on their own fields. These screnings consist of small and light-weight seeds and weed seeds. The crop resulting from the use of such poor seed is certain to be poor. Not only that, but continuous use of screenings containing high percentages of weed seeds is sure to make the weeds in the field so thick that only a small part of a normal crop can be grown. The farmer who has his own and his community's best interests at heart will not continue to sow weed seeds.

Vegetable Seed Control

Each year of the biennium the division has established standards of germination for vegetable seeds as required by Section 1494x—1 of the statutes.

Ten or more samples of vegetable seeds of various kinds have been purchased each year from each of twenty-five or more of the big seed companies of the country. Inspectors have collected packets of seed

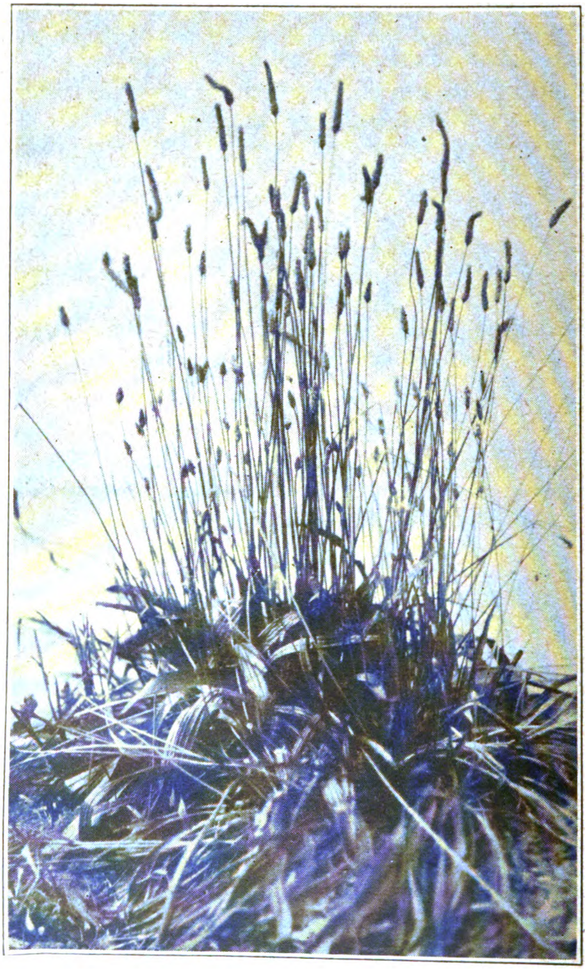


Fig. 1.—The buckhorn, which is one of the weeds introduced into Wisconsin through the use of impure seed, is becoming an extremely bad weed in the state and unless checked will destroy its reputation for red clover, as the Canada thistle has for alsike clover seed. Seed dealers complain bitterly of the increasing prevalence of the seeds of buckhorn in Wisconsin grown clover seeds. It should never be allowed to go to seed nor should seed containing it be sown.

from boxes of seeds exposed for sale in groceries, general stores, hardware and drug stores or wherever found. They have also collected samples from bulk stocks in the places of business of the vegetable seed companies doing business in Wisconsin. These samples have been tested and the results recorded. The data so far accumulated show that some concerns are supplying their customers with high-grade seeds. Others supply high grades in certain lines and low grades in others, the latter being apt to be of varieties which are most difficult to procure readily. Others still supply seeds, only occasional kinds of which germinate up to the standard, and being the varieties which are readily obtainable and normally give high germination tests.

The Dunkirk Seed Company

In the last biennial report mention was made of the very poor quality of the vegetable seeds being sold in Wisconsin cities, especially in Milwaukee, by the Dunkirk Seed Company, of Dunkirk, New York. In 1920-1921 many samples of their seeds were collected. Germination tests were made and the seeds found to be of the same poor quality as in previous years. Wherever boxes of their seeds were found dealers were ordered to remove them from sale. In February of 1922, the company was warned against shipping poor quality seeds into Wisconsin. In return word was received that a carload of seeds was already on the way to Milwaukee. When the car arrived at destination, the field inspector, Mr. Lunz, was on hand and while the car was being unloaded took samples of various kinds of seeds from about ten per cent of the boxes in the carload. He also selected at random four full boxes of the seed and all were shipped to the laboratory for germination tests. The results of the tests on the Dunkirk seeds as compared with the state standards are given in the following table:

TESTS OF VEGETABLE SEEDS TAKEN FROM THE BOXES OF THE DUNKIRK SEED COMPANY, 1922

	Variety	Standard germination	Actual germination	Per cent above or below standard
Beans	Black Wax	85	84	— 1
	Golden Wax	85	84	— 1
	Kentucky Wonder	85	0	—85
	Henderson's Bush Lima	85	93	+ 8
	Refugee Wax	85	75	—10
	Stringless Green Pod	85	85	0
	Early Red Valentine	85	70	—15
Beets	Crosby's Early Egyptian	110 sprouts	106	— 4
	Detroit Dark Red	110 sprouts	88	—22
	Dewings Early Blood	110 sprouts	88	—22
	Early Blood	110 sprouts	131	+21
	Early Eclipse	110 sprouts	90	—20
	Early Turnip Bassano	110 sprouts	133	+22
	Improved Egyptian	110 sprouts	78	—32
Cabbage	Early Jersey Wakefield	75	35	—40
	Hollander	75	35	—40
	Late Flat Dutch	75	30	—45
Carrots	Danvers Half Long	65	30	—35
	Long Orange	65	20	—45
Cauliflower	Early Paris	75	10	—65
Celery	Giant Pascal	65	38	—27
Chard	New Curled	110 sprouts	126	+16
Chicory			42	
Sweet Corn	Country Gentleman	80	93	+13
	Golden Bantam	80	80	0
	Stowell's Evergreen	80	83	+ 3
Cucumber	Early Green Cluster	85	26	—59
	Green Prolific	85	92	+ 7
	Imperial Long Green	85	76	— 9
	Imperial White Spine	85	35	—50
Dill		70	13	—57
Endive		80	92	+12
Kale	Dwarf	85	10	—75
Kohlrabi	Early Purple Vienna	80	66	—14
	White	80	10	—70
Leek	London Flag	65	0	—65
Lettuce	Celery	85	94	+ 9
	Cos	85	74	—11
	Denver Market	85	90	+ 5
	Grand Rapids	85	92	+ 7
	Prize Head	85	60	—25
	Simpson's Black Seeded	85	37	—48
	Wilson's Early Cabbage	85	8	—77
Muskmelon	Netted Gem	85	20	—65
	Surprise	85	26	—59
Onion	Bunching	75	24	—51
	Southport Yellow Globe	75	95	+20
	Red Wethersfield	75	30	—45
	Yellow Danvers	75	61	—14
Parsley	Long rooted	65	14	—51
Parsnip	Hollow crown	65	8	—57
	White Dutch	65	15	—50
Peas	Champion of England	85	20	—65
	McLean's Advancer	85	86	+ 1
	Nott's Excelsior	85	83	— 2
	Telephone	85	28	—57
Pepper	Bull Nose	60	37	—23
Radish	Early Carman Olive	85	60	—25
	Early Red Turnip	85	92	+ 7
	French Breakfast	85	67	—18
	Long Black	85	72	—13
	Long White	85	98	+13
	White Icicle	85	81	— 4
	Rosy Gem	85	73	—12
	Wood's Early Frame	85	89	+ 3
Rutabaga	Purple Top	80	50	—30
Spinach	Bloomsdale	65	10	—55
	Long Standing	65	8	—57
Squash	True Hubbard	80	28	—52
	Summer Crookneck	80	12	—68
Thyme			26	
Tomato	New Stone	80	44	—36
	Paragon	80	74	— 6
	Perfection	80	60	—20
	Trophy	80	82	+ 2
Turnip	Purple Top Globe	85	91	+ 6

The results were so unsatisfactory that the company was refused permission to distribute the boxes in Milwaukee unless each packet was labeled with the germination test as required by the law. The company proceeded, however, to begin distribution in spite of orders to the contrary, and some of the boxes were placed in Milwaukee stores before the inspectors were aware that it was being done.

A warrant was at once sworn out and placed in the hands of the sheriff, who made an effort to locate the agent, but found he had left town. A letter was sent to every grocer in Milwaukee warning him that he was liable to prosecution if he had a box of Dunkirk seeds in his store which he proposed to sell or offer for sale. So far as possible the boxes already distributed were located and the inspectors visited personally 236 Milwaukee dealers, closing the boxes of Dunkirk seeds. Inspectors also visited the cities of Racine, Kenosha, Janesville, Beloit, Fond du Lac, New London, Watertown and Madison and ordered all boxes of Dunkirk seeds closed. Many farmers and city gardeners were saved from serious disappointment and loss at a time when there was much unemployment in the cities and garden produce was greatly needed to help provide a living for those who had almost no other source of food supply.

Weed Control

In its prosecution of the share of the weed control work delegated to it by the legislature, the division has adopted three lines of attack.

First—Through meetings and discussions it is endeavoring to convince Wisconsin farmers that noxious weeds are reducing the yields of, and increasing the cost of raising farm crops. In some cases they are driving the farmers off the farms and in all cases they are a menace to the farming industry of the state.

Second—It has attempted to arouse the town, village and city officers and weed commissioners to the increasing necessity for an earnest and vigorous prosecution of their duties under the weed control law to the end that the alarming spread of noxious weeds may be prevented.

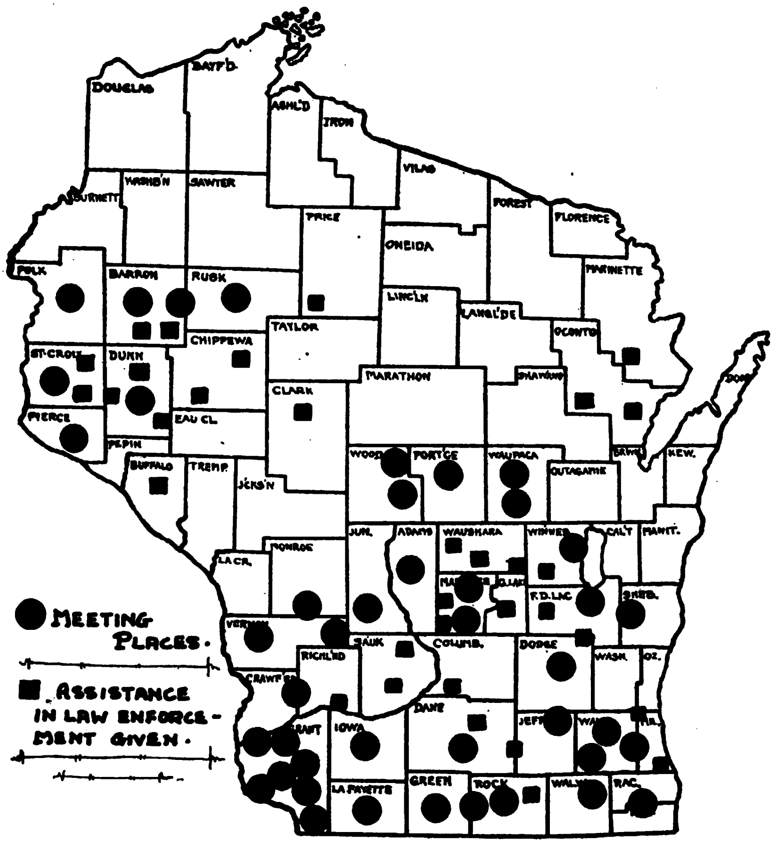
Third—Through its inspectional force it has endeavored to reinforce the authority of town, village and city officers and weed commissioners and in certain cases to prescribe times and methods of eradication.

Traditions Must Be Overcome

The weed law has always been unpopular and consequently has never been enforced to the proper extent. This might be expected of any law that affected so large a number of people as does the weed law, and when the law has been habitually violated, one can see that enforcement means an entire change of mental attitude. Many have feared the enforcement of the weed law, not because they did not believe in weed control, but because its enforcement to the letter would jeopardize the interests of even the most careful farmer in the community. It probably was this fact that led the legislature to place the responsibility for its enforcement in the hands of local officials who naturally would know local conditions and would follow local sentiment in enforcing the law. This local sentiment in many cases has not been favorable to the enforcement of the weed law except in a very superficial manner.

Efforts to Inform Farmers

No law can be enforced without public sentiment behind it and upon this fact the Department of Agriculture has based its activities. For two years a member of the department has been on the Farmers' Institute staff and has addressed audiences in nearly every part of the state on the subject of weed control. The aim has been at each meeting to place the facts before the people and leave to them the decision as to the matter of weed control. At every meeting there was a strong sentiment that something must be done and done quickly to prevent



Map No. 2.—Showing where meetings were held with appointing officer and weed commissioner, and points where visits were made to assist commissioners in the solution of troublesome or puzzling cases. The circle indicates meeting places and the square, places where assistance in law enforcement was given.

even greater losses than we are now experiencing. At each meeting the main features of the law as well as preventive measures were discussed. The interest in these meetings was gratifying and much was done to bring before the public the need of weed control. During 1920 and 1921 twelve, and in 1921 and 1922 twenty-six such meetings were held. Several days before each meeting the town chairman and weed commissioners of adjacent towns were notified and requested to be present at the meeting. The response to this request was good and the discussions led by them greatly added to the interest of the meetings. The duties of the town chairman and weed commissioners were emphasized and methods for the proper performance of their duties were discussed. They were advised that the Department of Agriculture was ready at any time to give all possible aid to them in the enforcement of the law.

The law specifies that where noxious weeds are growing in grain fields and cutting them will destroy a crop, the Department of Agriculture shall prescribe the time and manner for cutting. A provision of this nature would naturally bring a large number of requests for help to the department. Many of these can be settled by correspondence, but owing to varying conditions, visits are necessary in a number of cases. Visits were made to the following named localities and such adjustments made as the judgment of officials and inspectors dictated.

Name of Party Asking Advice	Address	No. of farms visited
Albert Guenther	South Milwaukee	5
Otto Ream	Berlin	8
Albert Berkhauser	Menomonee Falls	4
W. C. Brancill	Briggsville	9
John Barrell	Montello	32
Dr. Pichering	Muscoda	2
C. K. Johnson	Morrisonville	3
W. A. Schwenge	Horicon	8
Geo. Thompson	Deerfield	7
J. Weber	Sullivan	6
J. Grove	Lena	7
S. Sevenson	Knapp	4
F. B. Sleeker	Woodville	6
J. B. McSlovald	New Richmond	11
A. Heldstab	Rice Lake	3
S. B. Jones	Barron	8
Wm. Grove	Amery	2
	Total	125

In addition to the above, visits were made in Barron, St. Croix, Oconto, Winnebago and Richland counties to aid and advise weed commissioners in the performance of their duties. In Winnebago and Barron counties certain local weed commissioners seemed to believe that there had been willful violation of the weed law by certain land owners. These were thoroughly investigated and the offenders were brought into court, convicted and fined.

The varying attitudes taken by those in charge of enforcing the law are shown by the following quotations taken from reports sent to this office:

Mr. H. H. "I think it is almost an impossibility to enforce the weed law in this town, as well as in other towns. There are only about ten per cent of the people who take care of their weeds. Our weed commissioner notified those parties where weeds were real bad and very few responded—in fact, there are many farms in this town on which there would be practically nothing left if the people cut their weeds."

Mr. H. H. "This town has about 21,000 acres in its area. There is hardly an acre which has not noxious weeds, especially Canada thistles, on it. To cut all the weeds in the grain is impossible without destroying a large part of the crop. Farmers are hard hit enough by high taxes and low prices without destroying their crops."

Mr. N. A. T. "No one will qualify for the position here. The town is large and newly settled. Settlers are few and far between, and it is hard to get around."

Mr. P. S. "I think they tried hard enough, but did not like to serve written notice. I intend to appoint only one next year and would expect better results."

Mr. N. P. N. "I wish to say that this town is mostly wild and unimproved land and the most troublesome weed we have is quack grass, and the farmers as a general rule try to stop the spreading of this weed as much as they can, as it is to their own advantage to do so. As none of the weed commissioners qualified for the office I can make no different report and tell the truth. Last spring we explained the law at our annual town meeting in regard to noxious weeds, and this is all that I can do. I divided the town into three parts and thought that by so doing there would not be so large a district for each one, but none seems to want the job."

Mr. A. F. "In regard to the weed proposition in our town, the law cannot be complied with, for there is not one acre of land in the town but what has weeds—thistles, mustard, quack grass, or anything you may mention. We would drive the people off their land if we were to strictly enforce the law."

Mr. H. A. S. "I am convinced that, after two years of experience and observation, it will be necessary to pay more salary to the weed commissioners in order to get good men to accept the position and hold it for more than one year. My recommendation would be to

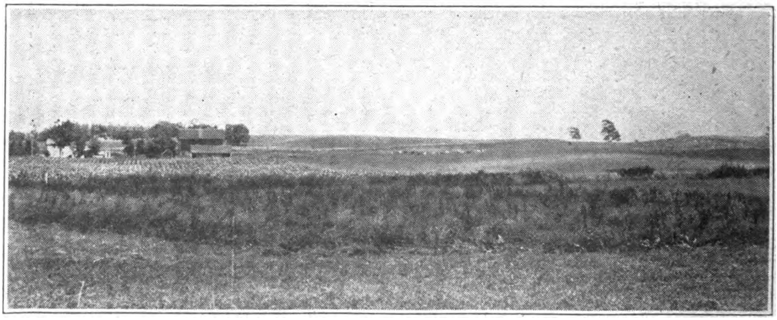


Fig. 2.—A patch of weeds consisting largely of yellow docks left uncut in a hay field, giving the weeds an opportunity to go to seed and be carried farther down the valley by the water. The weed commissioner failed to see them. He was probably too busy at farm work to protect his townsmen by cutting weeds at three dollars per day.

allow a stipulated extra compensation to cover average expense of travel in the performance of duties of the weed commissioner's office. Believing this would result in better service and hoping you may do what you can to promote better control of the weed situation, I remain, ——."

Mr. F. C. B. "Till I took this office nothing was ever done in this town about a weed commissioner or the weeds, and I was unable to get a man to qualify as weed comminssioner, so took up the matter with our best road boss and he said he would do what he could to get the weeds taken care of. I was talking with him yesterday and he said he found the weeds very well taken care of. We are planning to try and have whoever is in office next spring have a far better system, if possible."

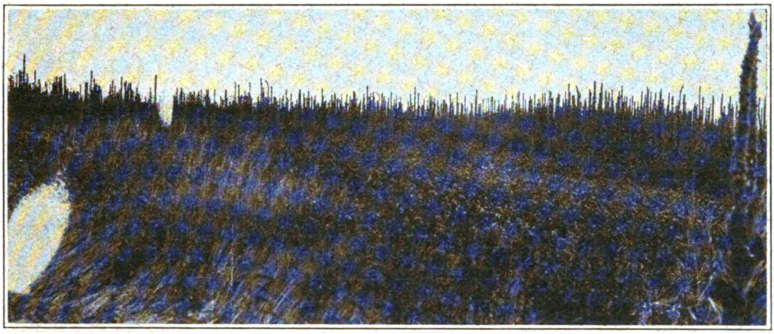


Fig. 3.—Acres of quack grass, Canada thistles and mullen compose the vegetation on this field. Note the forest of mullen plants in the background, Canada thistles in the right foreground, and quack grass at the left. What but extremely rapid spread can be expected in a district where such weed areas are allowed to ripen seeds undisturbed? Let's get after them. Here is a task for the weed commissioner, who should be given all possible help and encouragement.

Mr. J. R. "In sending in this report from weed commissioners, would say that they have performed their duties very well this year. It has been a very hard task, as the previous years the weed commissioners or other town officers have been somewhat careless in compelling the land owners who have obnoxious weeds to cut or destroy same. I also hope that in the near future we may be more successful in destroying all obnoxious weeds."

Mr. T. J. F. "I want to say this: People are just learning to know some of the weeds. Some who have had them for years, not knowing what they were, are now fighting them like dogs. Some use salt and let the cattle tramp on them continually; some keep them plowed down, and some also use gasoline or oils of some kind or other quite successfully. Briefly stated, what we can use is some information from time to time from men who actually know the best method, also the most inexpensive method to destroy weeds permanently."

Mr. E. K. "In regard to the cutting of all weeds, would say that it has been hard for some to clean up all weeds which the law requires, but they are beginning to see the benefits of the law more each year. To get a good commissioner is the hardest job."

Mr. J. A. "I have just got back from looking over the work of local weed commissioner appointed by me. I think that he has done very good work. The people around the town say that he is the only man who has ever made them cut their foul weeds since the town has been organized as a town. I think he has done well."

Mr. B. B. "I think the weeds have received more attention this year than last year in our town. I think the proper way to do is to send your weed cards to the assessor before the first of May hereafter, as I think you will get better results by personal delivery than by mail."

Mr. P. M. "We have done better work than ever before. Farmers are beginning to see that something must be done, but so many of them must be told to cut their weeds before they will do anything. We are very fortunate to have a good weed commissioner; so many towns seem to get nothing but a dub, a man who is afraid to make them cut their weeds; so it looks to me as if they would get better work done if they had to hire a stranger."

Mr. J. A. C. "Our town this year has shown a better spirit to get control of bad weeds than ever before. I told the weed commissioner and everyone else they had to comply with the law and I have just one suggestion to make—that is, to keep after everyone to keep the weeds under control; if we don't, the weeds will control all of the land in the state."

Mr. H. R. E. "In regard to the cutting of weeds for the present year, I am of the opinion that there has been more interest taken in the work than formerly."

Mr. A. E. T. "Think great improvement is being made in this work. Farmers are beginning to realize the necessity of destroying weeds. It is hard to get men to serve as commissioners as prescribed by law. The road overseers have acted in that capacity in this town and have taken care of their respective districts very well, as a rule. It is something of a matter of education and civic pride, and good progress has been made over preceding years. Think in a year or two more it will be the ambition of every farmer to do his utmost to exterminate these pests."

Mr. C. A. D. "We had no complaints about weeds this year. Farmers kept down the weeds as much as they possibly could. There are fewer weeds in this town than there were five years ago."

The noxious weed problem is much more serious in some parts of the state than in others. In the worst infested areas the spread has been rapid and the infestation extending to larger and larger areas. In the less badly infested areas the patches of noxious weeds have been considered as of minor importance and their destruction neglected. This has been largely because town chairman, village presidents and city mayors, who should bear the responsibility for enforcing the law and use their influence to get the weeds destroyed, have not fully realized the menace of the weed problem to the state as a whole, but were thinking of it only in terms of their own local communities.

In an effort to bring about a better understanding of the problem and to secure a more powerful cooperative effort to obtain adequate weed control the division in 1920-21 inaugurated a plan for meeting the county boards in as many counties as could be reached in the week or ten days in November during which the county boards are in session. In 1920-21 representatives of the Department of Agriculture addressed fourteen county boards and discussed the weed problem and emphasized the need for more energetic and concerted action. The spirit at these meetings was fine. They have resulted in a better grasp of the problem by everyone concerned and should result in a greatly increased activity in the solution of one of our worst agricultural problems.

Weeds in Growing Grain

One of the questions most often asked is what to do with noxious weeds in growing grain. It is a serious problem. It may, and often does, mean the destruction to a greater or lesser extent of a food crop. The department has taken the following attitude in this respect and has advised the weed commissioners to act accordingly.

Where patches of thistles are isolated over the field, cut the thistles and grain with a scythe or mower and burn.

If thistles are widely scattered, clip tops with scythe or knife in such a manner as will effectually prevent seeding.

In case a field is so infested that the crop will be destroyed and where a fair yield is probable if the field is left undisturbed, the grain should be harvested and handled in such a manner as to cause the least amount of distribution of weed seed. The farmer must also rotate his crops in a way that the same condition will not exist the next year small grain is grown on the field.

Each case of this kind presents an entirely different problem. It is impossible to give any but general rules. The town officials must use judgment and insist that the thing is done that is best for the community.

Responsibility for Weed Destruction

"Why should we do anything about our weeds when the adjacent towns are making no attempt to enforce the law?" This is one of the most frequent questions asked. "Passing the buck" is one of the oldest games in existence and one all like to play at times. However, the question is one of considerable importance and in a very few cases may be justified by conditions. The fact remains that in weed eradication, as in other things, a start must be made, and there is no better place to begin than at home. It is our own locality that should interest us to the greatest extent, and if each town will do its duty in weed control, there will be no cause for complaint.

Who Shall Destroy Weeds?

The tenant says, "I do not own the land; I have only a year's lease and cannot afford to spend much effort to keep weeds down." The landlord says, "I am not running the place; it is my tenant's business to keep the weeds cut." Another case of shifting responsibility, yet each expresses a view that to a large extent is justified. No landlord should expect a tenant on a short-term lease to prevent seeding of noxious weeds on a badly infested farm without giving some aid. The control of weeds will mean considerable labor, the benefits of which will extend over a period of several years, usually noticeable after the tenant has left the farm. On the other hand, the landlord hesitates to assume responsibility for a tenant's indifference to the weed problem. The only way out of this difficulty is to have a clause inserted in the lease fixing responsibility for the carrying out of the provisions of the weed law. Such a provision is now common in some parts of the state and should be in every lease.

Lack of Time Poor Excuse

Another excuse, "I have no time or can get no help," is a very favored phrase. It must be granted that this has been and may be at the present time true to a certain extent. One landowner writes, "Weeds along the roadside on East Avenue have gone to seed because there has been no opportunity to cut them." This man may be honest in his statement, yet for the good of his own farm and the community in general, to say nothing of appearances, it would seem that an effort ought to be made to cut the noxious weeds along the roadside. This matter was brought to our attention by his neighbors who certainly had a good legitimate excuse for complaint. It does not seem that the cutting of weeds along a roadside would entail a great amount of effort and surely would improve appearances. If a farmer has more land than he can handle on which he cannot keep the noxious weeds down, it follows that he is not producing large crops and possibly he had better limit his cropping to a smaller acreage from which the weeds can be eradicated.

What Is, Must Be.

Another argument is often heard: "I've always had Canada thistles and always will; what is the use of my cutting them, There will be seed blowing all around anyway." Again a desire to shift responsibility, an idea that what has been, always will be. Anyone who has visited the eastern part of the state where thistles have gained a strong foothold and noted the damage they cause, knows that in many cases over twenty per cent of the grain bundles are thistles. Not only is this a direct loss in yield, but also makes handling of the crop difficult and disagreeable. In going from this section to a portion of the state practically free from thistles, one is certainly impressed that it would be a calamity if Canada thistles should be allowed to spread to lands now free from them. Every effort should be made to prevent it, and the first step in this is prevention of seeding.

Cut-Over Lands a Problem

Another problem is that regarding the seeding of noxious weeds on wild lands, in swamps and forests. In some cases this is a grave problem. There is undoubtedly considerable acreage in Wisconsin where the destruction of weeds would cost more than the land is worth. In forests and swamps it is often utterly impossible to get to them or even find many of these patches. Knowing that these weeds are a menace, the difficulty of destroying them offers no reason why great efforts should not be made to control these pests as far as it is possible to do so. It no doubt would be for the general good if control of such infestation were provided for through general taxation.

The Canada Thistle Menace

The Canada thistle, because of its wind-carried seeds, is the worst menace to successful farming in the state. Farmers have stated that if they were compelled to destroy the Canada thistles on their farms they would have to quit farming. If this statement is true then there is certainly need for vigorous action on the part of every landowner and business man in the state. There are thousands of acres of Wisconsin land on which thistles are growing as thickly as in the field shown in the illustration below.

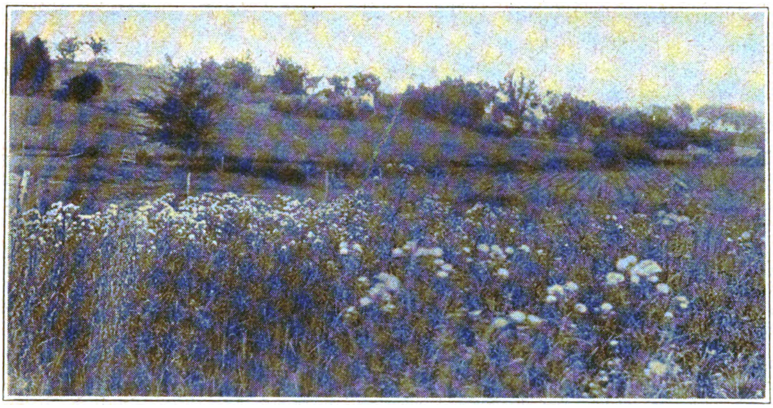


Fig. 4.—Canada thistles gone to seed on the edge of a big valley in central Wisconsin. The seeds will soon be carried by the wind to infest some other man's farm or other portions of the same farm. Some weeds will also be washed down the valley by the water. The property owner who allowed these thistles to go to seed did not have the best interests of the community at heart.

What chance is there for any crop to grow on land so badly infested? According to the testimony of many farmers, Canada thistles now infest ten times as large an area as they did twenty years ago. The larger the area affected the larger the number of seeds produced and the more rapid the spread of the weed becomes. They must be prevented from bearing seeds, if they are not to take possession of the farming lands of the state. Every farmer who has the best interests of himself and his posterity at heart will exert every effort to see that his locality is aroused to the danger, and definite measures of control adopted.

The Canada Thistle Machine

In the last biennial report mention was made of a machine which was so constructed as to strip off the heads of the Canada thistles and thus prevent them from bearing seed. It was found possible to use this machine to advantage at a stage in the growth of the thistles when their heads projected above the grain.

Further investigation has shown this to be a very useful tool for the purpose. Its general use in the worst infested districts will help greatly to prevent the further rapid spread of Canada thistles.

The Field Dodder Problem

As mentioned in the last biennial report, parts of certain counties in central Wisconsin had become badly infested with field dodder. This infested area had been one of the best clover seed producing areas in the state, but the market for the seed was being rapidly destroyed by the dodder. The infested area gradually grew larger as more farmers used the infested seed. Many of the farmers hauled their clover seed to a cleaner and took the screenings back to the farm to be used to seed their own fields the next spring, thus making the infestation more intensive.

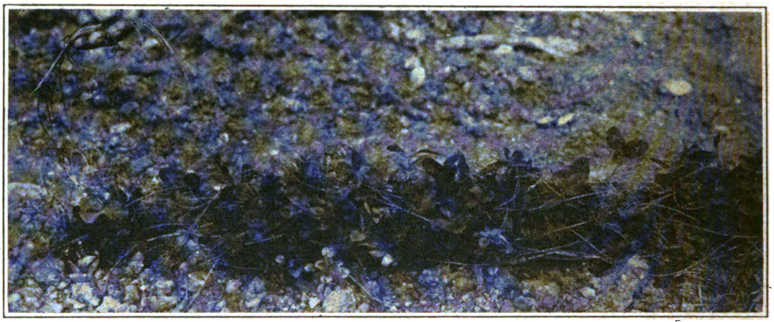


Fig. 5.—Field dodder on red clover plants. Note the slender leafless stems extending for some distance and attaching themselves to all the clover plants they touch. The dodder plants draw all their sustenance from the clover plants and soon cause them to turn brown and die.

Dealers Appeal for Assistance

The dealers in that section of the state had been accustomed to buy this seed from the farmers at the market rates for good quality seed, but were themselves compelled to sell the seed on the wholesale market at a reduction because of the dodder seed it contained. They appealed to the Department of Agriculture for aid in cleaning up the dodder-infested area. The inspector with the cooperation and aid of the county agent and county superintendent of schools held meetings with the dealers, with the teachers, and school boards at their conventions, and methods of controlling the dodder were recommended. A special bulletin on the subject of field dodder was printed and widely distributed in the infested district. Dealers began refusing to buy the seed and the farmers' pocketbooks being affected, they began to see the light. They began to use the control methods which had been recommended and the effect is shown in the number of lots of clover seed condemned for dodder seed this year as compared with a year ago. Last year, 1920-1921, there were 22 lots of clover seed condemned because of field dodder seed; this year only 2 lots. There is every prospect that the infested area will be completely rid of the dodder in the near future.

Other Troublesome Weeds

The dandelion is increasing at a very rapid rate and is now invading the meadows and fields. If it continues to spread to these fields it may become as troublesome as any weed in the state except quack grass and Canada thistles. Careful plowing and preparation of fields are necessary if the march of the dandelion is to be halted.

The beaked nightshade or buffalo bur is another weed of which many specimens have been sent for identification from many parts of the state. It has troublesome characteristics and should be prevented from going to seed. The illustration gives an excellent idea of the appearance of the plant, though many plants grow to be very much larger. Where they grow in patches they literally cover the ground.

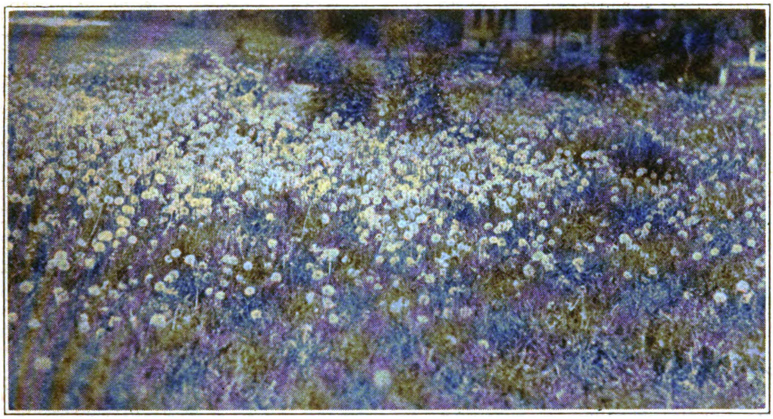


Fig. 6.—"How doth the 'golden dandelion' improve each shining hour" when it comes to taking possession of the lawns and pastures. The illustration shows one meadow, portions of which are so badly infested that a very small crop of grass is produced.

Work of the Office

The correspondence of the division is extremely heavy and the packing and mailing of weed notices and other blanks to town, village and city officers is no small task. During the first year of the biennium 4,663 dictated and 6,354 circular letters; 3,779 seed certificates; 2,687 bulletins; 12,405 of mimeographed and 149,000 pieces of printed matter were mailed out from the office. The second year 3,798 dictated and 7,946 circular letters; 3,296 seed inspection certificates; 12,114 bulletins; 15,218 of mimeographed and 100,664 pieces of printed matter were mailed to Wisconsin citizens.

A total of 8,461 dictated and 14,300 circular letters; 7,075 seed inspection certificates; 14,801 bulletins; 27,623 mimeographed and 249,664 pieces of printed matter sent out give some idea of the work done in the office, practically all by one clerk and stenographer. All this indicates progress at low cost.

It is impossible to longer ignore the fact that the weed problem is as serious as any confronting the farmers of Wisconsin at the present time. Any measures looking toward improving agricultural conditions in Wisconsin must include proper support of a weed eradication campaign.

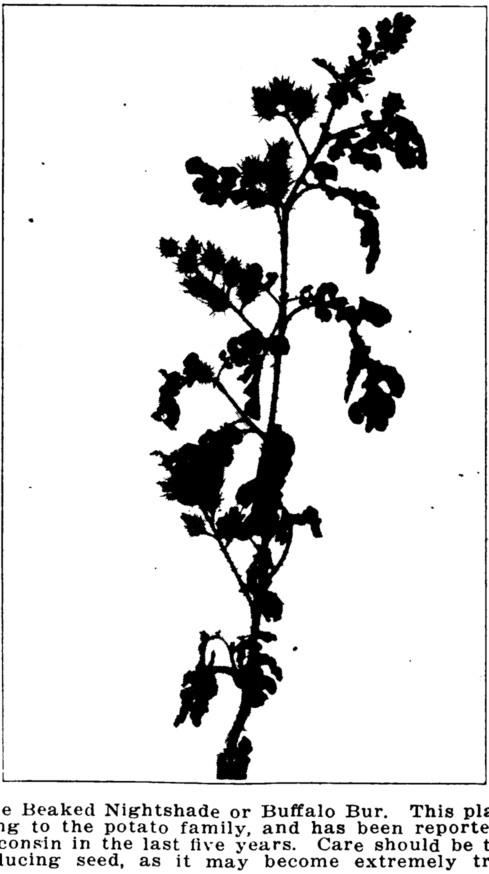


Fig. 7.—The Beaked Nightshade or Buffalo Bur. This plant is an animal, belonging to the potato family, and has been reported from many parts of Wisconsin in the last five years. Care should be taken to keep it from producing seed, as it may become extremely troublesome if neglected.

DIVISION OF HORSE BREEDING

DR. A. S. ALEXANDER, *Director*
A. B. ALEXANDER, *Assistant*

The spring of 1921 found the horse breeding industry in unsettled condition, due to the general slump in all lines of business. At first it seemed that there would be little patronage of sires, and many owners neglected to replace dead or retired stallions, with the result that some horse breeding counties had few high-class sires. Later, when farmers awakened to the fact that needed work horses were scarce and young colts practically lacking, interest in horse breeding revived. Stallion owners then renewed their licenses, and many bought new horses for use in Wisconsin.

Notwithstanding the decrease in the number of stallions licensed in 1922, conditions are really better than last year. Many old stallions have been retired from service, and some of these have been replaced with new, individually excellent sires, which will do more to increase the quality of Wisconsin horses than a great many inferior stallions.

Scarcity of Work Horses

There are many arguments in favor of more extensive horse breeding. Probably one of the greatest is the present shortage of good work horses. Formerly a large percentage of these came from Illinois, Iowa, Missouri, the Dakotas, Nebraska and Kansas, but during later years these states have had practically no surplus. It was reported in 1920 that in many districts in which every farm used to produce one or two colts a year, horse breeding had fallen off to a point where only one colt was produced to an average of six farms.

The number of horses in the mountain states has practically doubled in the last ten years, but high freight rates and scarcity of feed has made shipment and sale of range horses unprofitable. As a result, western horses that did reach our markets were of poor quality.

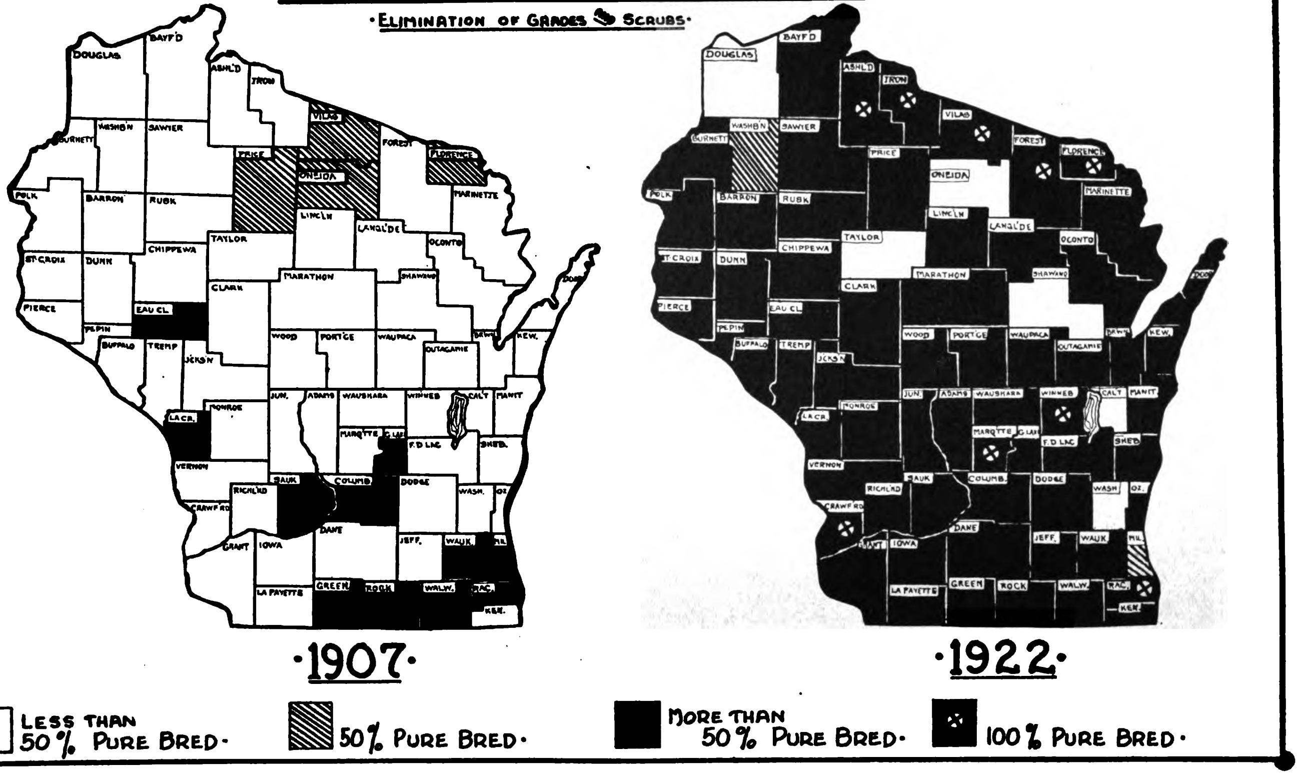
The tractor, which it was predicted would do away with the need for a majority of farm horses, has so far failed to do so. Many farmers who bought tractors during the war have given them up as too expensive. Reports coming in from various parts of the United States and Canada show that thousands of tractors are standing idle, due to the high cost of repairs and maintenance. In addition, the fact that a good draft mare produces colts to carry on her work when she is gone is doing much to overcome the use of expensive tractors.

Conditions in Wisconsin

The number of horses on the farms of Wisconsin on January 1, 1921, according to the report of the State-Federal Crop Reporting Service,

·IMPROVEMENT IN WISCONSIN STALLIONS·

·ELIMINATION OF GRADES & SCRUBS·



was 674,000, compared with 680,000 in 1920 and 617,000 in 1910. On January 1, 1922, there were 656,000 horses, having a total value of $61,008,000.

Although the number of public service stallions in Wisconsin has decreased, there has been a steady increase in the percentage of purebred sires used. The total number of licensed stallions in 1920 was 1,688; in 1921, 1,445; and in 19222, 1,251. While this reduction means a smaller available supply, the following table shows the gain in the percentage of purebreds, which insures owners of a gradual improvement in the breeding of foals.

TABLE I—NUMBERS AND PERCENTAGES OF WISCONSIN STALLIONS

Year	Pure Bred		Grade and Scrub	
	Number	Per Cent	Number	Per Cent
1907	1,285	35.0	1,975	65.0
1914	1,774	55.0	1,423	45.0
1916	1,814	59.2	1,239	40.8
1918	1,561	64.0	874	36.0
1919	1,372	66.9	679	33.1
1920	1,210	71.7	478	28.3
1921	1,081	74.8	364	25.2
1922	958	76.6	293	23.4

Distribution of Purebred Stallions

Licenses were issued in 1922 for 958 purebred stallions, of which a majority are Percherons and Belgians. Only two counties in the state, Douglas and Oneida, are now without purebred sires. Grant county leads in the number of purebreds with 62, while Dane follows with 38; Sauk, 34; Iowa, 30; and Dodge and Buffalo with 29 each.

A new and outstanding feature in horse breeding work for 1922 is the introduction into Grant county of a thoroughbred stallion, the property of the United States government. The Army Remount Service has acquired a great many high-class stallions, and is placing them in the various states to build up a reserve supply of horses suitable for army use in time of an emergency. These stallions are placed with agents, who must comply with the laws of the state in which the stallion is used. Fees charged correspond with those of the district, and a limit is set upon the number of mares to be served. It is estimated that approximately 200 stallions were assigned to the different states in 1922, the majority going to the southwest, where conditions are ideal for building up a reserve of saddle and medium weight stock. Applications have been made for more government stallions for Wisconsin, and it is hoped that these will be available for the season of 1923.

Grade and Scrub Sires Decreasing

The popularity of grade and scrub stallions is rapidly decreasing, and the number licensed during the period 1921-1922 is much smaller than in former periods. While many of these sires present a good appearance, they are lacking in the ability to transmit good qualities and breeding which are lacking in their blood. They cannot improve their species, nor can they sire anything but scrubs. For that reason they are a detriment to the horse breeding industry, and should be replaced by purebred stallions of high individual excellence. Several states have already legislated against the licensing of grade and scrub stallions, and the project is being considered in many others.

The accompanying chart shows to what an extent grade and scrub stallions have been eliminated from Wisconsin counties. The process has been gradual since the enactment of the stallion law. Each year has seen a decrease in their numbers. In 1920 there were 478 grades and scrubs; in 1921, 364, and in 1922 there are 293. It is hoped that this number will be much smaller next year. At the present time there are nine counties in which grade and scrub stallions have been entirely eliminated. In 1907 there were only eleven counties in which purebred stallions predominated. At the present time only eight Wisconsin counties have more, or an equal number, of grades and scrubs than purebreds.

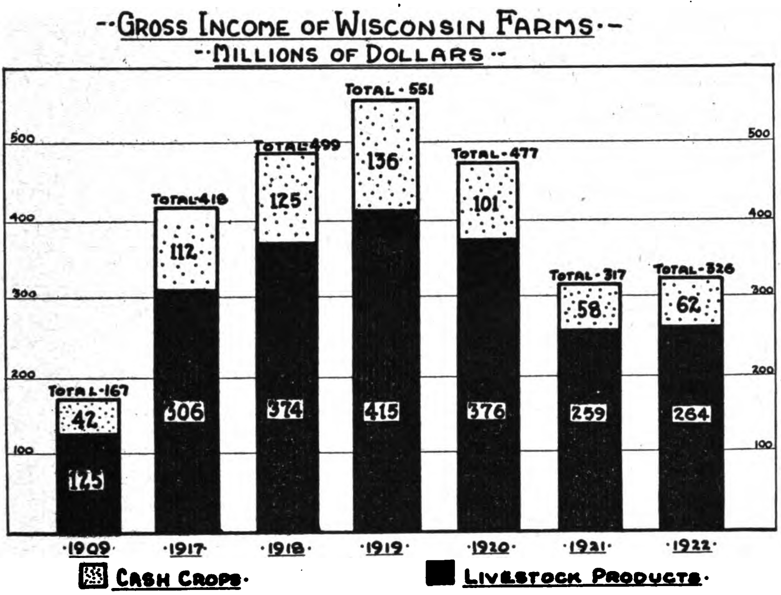
During the 1921-1922 period, it has been found that many stallion owners have bought new purebred sires, without insisting upon being furnished with official transfers of ownership. The importance of these transfers is just as great in the case of the purchase of a horse as in the purchase of a piece of land. No intelligent farmer would buy real estate without getting a deed showing a clear title. But the same farmer will buy a purebred stallion without proof of identity of the horse.

Because such transfers were missing, several owners have had to take out temporary scrub licenses for their stallions, until proof is given to identify the horse. Colts sired by such stallions cannot be registered, and the carelessness on the part of the stallion owner has cost many a mare owner the difference in value between a purebred and a nondescript colt.

Careful scrutiny of all record papers sent to the department has done much to eliminate bogus and altered certificates, which were quite common some years ago. Recognition of certain standard registry associations has also done much to prevent farmers from registering their horses in inferior societies, in which the regulations are of such a low standard that almost any horse can be enrolled.

In the work of the division during the past two years it has been found that horse breeding is regaining a foothold in Wisconsin. New purebred stallions are now available, and many more colts are being raised. With 656,000 horses, and only 14,500 tractors in Wisconsin, as reported by the State-Federal Crop Reporting Service on January 1, 1922, it may be readily seen that the horse is still the dominating factor in farm transportation work. With this fact in view it seems reasonable to advocate increased breeding of all available brood mares, to insure a steady source of horses.

CHART I



Wisconsin Farmers' Income Falls Below 1917 Level

TABLE I—GROSS INCOME WISCONSIN FARMS, THOUSANDS OF DOLLARS, 1921, WITH COMPARISON

(000 omitted)

	1921	1920	1919	1918	1917	1909
Value all crops	$189,083	$329,386	$399,647	$377,192	$333,179	$131,199
Less crops fed to stock (See Table IV)	131,117	228,297	263,506	252,017	221,264	89,115
Value cash crops	$ 57,966	$101,089	$136,141	$125,175	$111,915	$ 42,084
Value live stock products	258,742	379,720	415,050	374,230	306,820	125,025
Total or gross farm income	$316,708	$480,809	$551,191	$499,405	$418,735	$167,109
Live stock products, per cent of gross income	81.7	78.8	75.3	74.9	73.3	74.9
Per cent of 1909:						
All crops	144	251	305	288	254	100
Cash crops	138	240	323	297	266	100
Live stock products	207	301	332	300	245	100
Gross income	189	286	330	299	251	100

DIVISION OF AGRICULTURAL STATISTICS

JOSEPH A. BECKER, *Director* (to Oct. 15, 1922)
PAUL O. NYHUS, *Director* (Oct. 16, ——)

Why a Crop and Live Stock Reporting Service?

The division of agricultural statistics is a natural outgrowth of the demands made upon the state for information concerning its agricultural resources and production. People generally have come to recognize the government (state or federal) as the proper authority to collect and disseminate information concerning these matters. As an unbiased agency, it alone can be relied upon without question to faithfully collect and impartially distribute such information as desired by the public. The report of no private agency can command the unquestioned confidence of the public. Moreover, the existence of a periodic governmental report prevents the circularization of false statements which might otherwise be issued to deceive the public.

Wisconsin Reports on Dairy Production

More complete statistics on live stock production are necessary. To a considerable extent the kind and character of statistics is in response to the inquiries received. For this reason the original scope of reports, begun when Wisconsin was a grain growing state, was limited to the principal grain crops, and little attention was given to live stock. In recent years, as the state has more and more established its position as the leading dairy state in the Union, requests for dairy information have become more numerous and insistent. The division at present publishes much information concerning this industry, but much remains to be done. As increased appropriations become available, additional information concerning the state's major agricultural industry will be given first attention. There is urgent need of the establishment of a monthly report on the total production of milk by districts and counties. Such a service can be inaugurated when funds are provided.

Production Forecasts Are Very Valuable

The monthly forecasts of crop production, because of their timeliness, are the most important products of the division. In framing his program, the farmer-producer should know as early as possible the probable production of the major crops, not only in his own locality, but in the state and nation. These forecasts are begun in the spring as soon as the planting season is over and are repeated each month until harvest. The report relating to the first of the month is carried in the newspapers of the state usually by the eleventh.

County Production Based on Annual Farm Census

The annual county summary of crop and live stock production is based largely upon the annual farm census collected for the department by the assessors of the state. The reports of the 1,700 assessors for the past two years have been, with few exceptions, very satisfactory. It can be said with confidence that the reports are fully as complete as those of the decennial federal census.

Annual Crop and Live Stock Review

Two annual reviews of crop and live stock production were published during the biennium. The first contained state and county figures on acreage, yield, production, farm prices and farm values of all principal crops for 1920 with comparisons to previous years. In addition, county live stock population and value, and much additional material was presented. The second contained similar information for 1921.

Monthly Reports Printed

On July 1, 1921, the division began the publication in printed form of the Monthly Crop and Live Stock Reporter. At present approximately 4,500 copies are distributed to interested persons, not only in Wisconsin, but in other states as well. This publication appearing about the 20th of each month carries the information made available to the newspapers on the 11th and in addition a tabulation of county data.

Cooperation With Federal Department

Since May, 1917, the Wisconsin State Department of Agriculture has cooperated with the United States Department of Agriculture in the crop reporting work. A considerable saving in funds has been effected and the report strengthened by utilization of the combined facilities of the two departments.

Résumé of Crop and Live Stock Production

The gross income of Wisconsin farmers in 1921 was placed at 317 million dollars, 160 million less than in 1920, and 234 million less than in 1919—the peak year for agriculture in the state. This is the lowest return in the 5 years (1917 to date) that this estimate has been made. While figures are not available for pre-war years (1912-1914) it is probable that the farm income in 1921 was as small or even smaller than in those years.

Crops of 1921 Worth $189,000,000; 1922, $228,000,000

The total value of Wisconsin crops in 1921 was approximately 189 million dollars, or 57.5% of their value in 1920. Because of the marked decline in farm prices, and the short crops, the 1921 values were the lowest since before the war. The estimate of the 1922 crop values is placed at $228,000,000, which is 20% larger than last year,

Crop Area Nearly Same in 1921; Greatly Increased in 1922

In southern Wisconsin a considerable decrease in acreage, compared with the previous years, took place in 1921. The steady increase in crop area in northern counties, however, resulted in a net increase of about ⅓ of one per cent. In 1922, with lower labor costs and a generally more optimistic attitude on the part of growers, an increase of about two per cent in the state as a whole was made.

Live Stock Production in 1921 Shows Great Decline

Live stock prices, particularly those of dairy products, withstood the general farm decline much longer than did crop prices. Consequently, the total value of live stock production in 1920 was only slightly below 1919. In 1921 prices of dairy products suffered a severe decline with the result that the total value of these products in 1921 was over $120,000,000 less than in 1920. With a higher and more stable market in 1922, the value should be considerably increased. A preliminary estimate places this value of $275,000,000. A final figure will not be ready until February.

CROPS

Production Low in 1921; High in 1922

In 1921, only one major crop, corn, exceeded the 1920 production. From the standpoint of total production the year was much below average. The tame hay crop was greatly reduced by frost damage in May; the production of small grains and potatoes by dry weather and hot winds in July and August; while corn withstood the dry weather and benefited greatly from an unusually warm fall. In 1922 practically every Wisconsin crop produced an above-average yield. After a late spring, during which planting was greatly delayed, May was warm and produced a quick start, while ample rains and high temperatures in June advanced all crops rapidly. Hay crops made a particularly heavy growth. A cool July retarded corn, but provided ideal conditions for filling and maturing of small grains. Higher temperatures during August and September insured filling and maturing of corn, and an unusually late potato harvest.

Corn Crop Nearly 100,000,000 Bushels

In both 1921 and 1922, the Wisconsin corn crop approached 100,000,000 bushels. With a steady increase in silos and the increased use of early maturing varieties in northern counties, the acreage has increased constantly during the past years. Acreage in 1922 was given at 2,209,000 acres, compared to 2,110,000 in 1921, and 2,067,000 in 1920. Average yield in 1922 was 44.5 bushels per acre, compared to 46.2 bushels in 1921, 43.2 in 1920, and a 10-year average of 37.3 bushels. Production in 1922 was 98,300,000 bushels as against 97,405,000 bushels in 1921 and a 5-year average of 69,139,000 bushels. Silage corn yielded

9.0 tons per acre in 1921, and about 755,000 acres were required to fill the 92,000 silos in the state. In 1922 the average yield was only 7.8 tons per acre, and approximately 1,034,000 acres were needed for silage. Silos on May 1, 1922, had increased to 95,680.

Oats in 1921 Smallest in Years; in 1922 Above Average

Due to a late spring and poor seed, acreage of oats in 1922 was reduced to 2,465,000 acres, as compared to 2,632,000 acres in 1921 and a 5-year average of 2,317,000. Production was estimated at 101,558,000 bushels, as compared to 63,943,000 in 1921 and a 5-year average of 95,497,000 bushels. Yield and quality were both very low in 1921 and high in 1922. The 1921 average yield was 24.3 bushels per acre, and in 1922, 41.2 bushels, as compared to a 10-year average of 38.3 bushels.

Wheat Production on Pre-War Basis

Acreage of wheat has declined from 561,400 acres in 1919 to 176,000 in 1922. This reduction has been mainly in spring wheat, a very unprofitable crop during the past three years. Acreage of spring wheat in 1922 was 81,000 acres, as compared to 125,000 in 1921 and 250,000 in 1920. In spite of a severe winterkilling, winter wheat harvested in 1922 was 95,000 acres, as compared to 89,000 acres in 1921. Total wheat production in 1922 is estimated at 3,006,000 bushels, as compared to 2,802,000 in 1921 and a 5-year average of 6,330,000 bushels.

Barley Area Declines Slightly

Barley acreage has declined steadily since 1912. In 1922 the acreage was 443,000, as compared to 473,000 in 1921, 516,000 in 1919 and 845,000 in 1912. Production in 1922 is given at 14,220,000 bushels, as compared to 10,647,000 in 1921, and a 5-year average of 18,514,000 bushels.

Rye Area Larger in 1922

After declining from 422,000 acres in 1919 to 371,000 in 1921, rye increased to 489,000 acres in 1922. Production is estimated at 7,139,000 bushels, as compared to 5,046,000 bushels in 1921; yield was 14.6 bushels per acre, compared to 13.6 bushels in 1921, and a 10-year average of 17.2 bushels.

Hay Crop Short in 1921, But Large in 1922

Acreage and stand of clover and timothy was severely reduced by freezes in May. A considerable acreage was plowed up for catch crops and the yield on the balance much below average. Yield per acre in 1921 is estimated at 1.28 tons, compared to 1.66 tons in 1920, and a 10-year average of 1.62. Total production was 3,407,000 tons as compared to 4,757,000 in 1920, and a 5-year average of 4,560,000 tons.

The 1922 crop was unusually abundant, with both acreage and yield much increased. The total production is given at 3,155,000 tons—an average of 1.76 tons per acre.

Alfalfa Acreage Reduced by Winterkilling

A severe ice and sleet storm in February killed out a large acreage of alfalfa in the southern counties. Acreage was reduced from a potential area of about 150,000 acres to 88,300 acres. In 1921, 131,000 acres were cut, and in 1920, 106,000 acres. Yield was also reduced somewhat on the acreage remaining. Production was 220,000 tons, compared to 343,000 tons in 1921 and a 5-year average of 190,000 tons.

Clover Seed Production Small

Clover seed production in 1921 was reduced to a minimum. Much clover was killed out by frost in the spring. In the heavy-producing counties the soil was too dry and temperature too high for proper filling and ripening. In the "in and out" sections, the hay shortage was so acute that very little clover was left for seed. The total area cut was only 98,000, compared to 172,000 in 1920. Production was 167,000 bushels, as compared to a 5-year average of 285,000 bushels. The estimate of 1922 acreage is 127,000, with a production of 229,000 bushels.

1921 Potato Crop Small; 1922 Crop Largest Ever Produced

Hot weather in July and August was disastrous to the 1921 potato crop. In many places the seed was "baked" in the ground, the stand imperfect, and plants and tubers small and undersized. With the exception of the frost-stricken crop of 1916, the crop was the smallest since 1906. The acreage was larger than ever before—315,000 acres compared to 308,000 in 1920. Production was 21,339,000 bushels, as compared to 33,261,000 in 1920.

Acreage in 1922 increased still further to 328,000 acres. Production is given at 41,000,000 bushels, or an average yield of 124 bushels per acre. This was the highest yield in many years.

The commercial crop of 1921 totaled 11,500 cars, as compared to 25,900 cars in 1920, 21,800 in 1919, and 25,200 cars in 1918. Of the 1922 crop it appears that over 33,000 cars are available. Because of the low market price, it is doubtful if a large percentage will ever be marketed.

Tobacco Area Curtailed In 1922

Price reductions of the 1920 and 1921 crops caused a decided curtailment of acreage in 1921 and 1922. Area declined from the high point of 50,100 acres in 1920 to 47,900 acres in 1921, and 40,000 acres in 1922. The 1921 crop was the third consecutive crop exceeding 60 million pounds. Yield was much below average in 1922, total production reaching only 46 million pounds.

Canning Pea Acreage Sets New Records

With the erection of 18 new factories in 1922, largely in new territory of northern counties, the area of canning peas increased to 72,600 acres in 1922. The production in 1922 was 198 per cent of that in 1921, or the equivalent of 7,800,000 cases of No. 2 cans. In 1921, the yield was low and 59,000 acres produced only 788,000 cwt., or 3,940,000 cases.

Cabbage Area Fluctuates Widely

Area of cabbage dropped from 16,100 in 1920 to 11,000 acres in 1921 and increased to 17,000 acres in 1922. Production in 1921 was 57,000 tons; in 1922, 163,000 tons.

LIVE STOCK

Wisconsin Ranks Fourth in Total Value of Live Stock

During the 5-year period 1916-20, Wisconsin ranked seventh in the total value of live stock. In 1921 and 1922, due to the larger decline in the value of meat animals than in dairy stocks, the state ranked fourth in total value, Illinois, Iowa and Texas alone exceeding her. The total value decreased $50,000,000 during the year. Aggregate value of horses and mules, milk cows, dairy heifers, other cattle, hogs, sheep, poultry and bees on January 1, 1922, was $224,000,000, as compared to $276,000,000 on the same date in 1921, and $379,000,000 on January 1, 1920.

Dairy Heifers Increase in Number

Dairy cows and heifers (over one year) on January 1, 1922, numbered 2,195,000, as compared to 2,177,000 in 1921 and 2,180,000 in 1920. Mature cows numbered 1,759,000, as compared to 1,777,000 in 1921 and 1,759,000 in 1920. Farm value of cows and heifers is estimated at $114,000,000, as compared with $142,000,000 in 1921 and $211,000,000 in 1920.

Other Cattle Increase Slightly

Other cattle, which includes beef cattle and dairy calves and bulls, are estimated on January 1, 1922, to number 885,000, valued at $17,000,000, as compared to 883,000, valued at 23 million dollars in 1921.

Brood Sows More Numerous

Swine numbered 1,659,000 on January 1, 1922, compared to 1,676,000 in 1921 and 1,596,000 in 1920. Brood sows, however, increased 6% during the year. The total farm value was $17,000,000 in 1922, $24,000,000 in 1921, and $38,000,000 in 1920.

Sheep Decline Steadily in Number

Following a temporary expansion during the war period, the decline in sheep industry has continued the trend begun in 1908. Sheep and lambs on farms on January 1, 1922, numbered 367,000, compared to 432,000 in 1921 and 480,000 in 1920. The total value was $1,688,000, compared to $2,765,000 in 1921 and $5,280,000 in 1920.

Horses Decrease Slightly

Horses and mules on January 1, 1922, numbered 660,000, compared to 667,000 in 1921, and 687,000 in 1920. The total farm value was $61,000,000, compared to $72,000,000 in 1921 and $78,000,000 in 1920.

A summary of live stock population is shown in Table II.

TABLE II—LIVE STOCK SUMMARY. NUMBER AND VALUE OF LIVE STOCK ON WISCONSIN FARMS, JANUARY 1, 1923, WITH COMPARISONS

	Number on Farms in Thousands		Farm Value Thousands of Dollars		Farm Price per Head in Dollars	
	1923	1922	1923	1922	1923	1922
Horses	643	656	$66,872	$61,008	$104.00	$93.00
Mules	4	4	412	392	103.00	96.00
Dairy Cows	1,759	1,759	--------	--------	--------	--------
Dairy Heifers	436	436	--------	--------	--------	--------
Dairy Cows and Heifers	2,195	2,195	125,115	114,140	$ 57.00	$ 52.00
Other Heifers	32	33	--------	--------	--------	--------
Steers	82	89	--------	--------	--------	--------
Calves	598	597	--------	--------	--------	--------
Other Cattle	164	166	--------	--------	--------	--------
Cattle other than Dairy Cows and Heifers	876	885	19,622	17,346	$ 22.40	$ 19.60
All Cattle	3,071	3,080	144,737	131,486	--------	--------
Brood Sows	438	418	--------	--------	--------	--------
Other Hogs (over 6 months)	326	364	--------	--------	--------	--------
Pigs (under 6 months)	961	877	--------	--------	--------	--------
All Swine	1,725	1,659	22,598	17,420	$ 13.10	$ 10.50
Breeding Ewes	251	275	--------	--------	--------	--------
Other Sheep (over 1 year)	16	17	--------	--------	--------	--------
Lambs	74	75	--------	--------	--------	--------
All Sheep	341	367	2,558	1,688	$ 7.50	$ 4.60
Hens and Pullets	12,456	11,641	--------	--------	--------	--------
Other Poultry	1,157	1,081	--------	--------	--------	--------
All Poultry	13,613	12,722	9,964	10,636	$ 0.79	$ 0.84
Colonies of Bees	140	134	1,064	1,179	$ 7.60	$ 8.80
Total	--------	--------	248,205	223,809	--------	--------

Live Stock Income 80% of All

Generally speaking, Wisconsin's farm production is directed toward marketing in the form of live stock products. In 1921 live stock contributed 81.7% of the total gross income. (By total gross income is meant the gross value of final products, whether actually sold or used on the farm.) Live stock production figures for 1922 will not be available until about March 1st. As previously mentioned, the value of live stock products declined over $120,000,000 as compared with 1920 and $156,000,000 in comparison with 1919. This decreased value was due not only to the decline in prices, but also to smaller quantity production of nearly all live stock products. Sheep, swine and poultry as meat were increased in quantity, while all other products were produced in smaller amounts than in 1920.

Value of Milk $90,000,000 Less

Farm value of milk produced represents 55.8% of the total live stock production, as compared to 61.3% in 1920 and 60.5% in 1919. The number of producing cows in 1921 was estimated at 1,802,290, as compared to 1,820,990 in 1920 and 1,801,548 in 1919. Due largely to unusually scanty pastures of late summer, production in 1922 declined over 100 pounds per cow.

Meat Products Decline $20,000,000

The value of meat production in 1921 was $91,658,000, compared to $112,108,000 in 1920 and $131,215,000 in 1919. Cattle sold for slaughter or slaughtered on farms in 1921 numbered 474,000; calves, 796,000; sheep and lambs, 407,000; and swine, 2,281,000.

Eggs, Wool and Honey Decrease in Quantity

Egg production was estimated at 74,975,000 dozen, as compared to 75,565,000 in 1920; the wool clip at 2,818,000 pounds, compared to 3,219,000 pounds; and honey production at 4,728,000 pounds, as compared to 5,281,000.

Table III contains a summary of the live stock production:

TABLE III—LIVE STOCK PRODUCTION, 1921, WITH COMPARISONS

Class of Live Stock Kind of Product	Number or Quantity in Thousands			Farm Value Thousands of Dollars			Farm Price Dollars per Unit		
	1921	1920	1919	1921	1920	1919	1921	1920	1919
Meat Products:									
Cattle, head	474	514	517	18,960	30,583	34,122	40.00	59.50	66.00
Calves, head	796	842	753	5,572	9,094	9,337	7.00	10.80	12.40
Sheep, head	407	364	443	2,523	3,385	4,386	6.20	9.30	9.90
Swine, head	2,281	2,099	2,107	56,341	59,192	73,745	24.70	28.20	35.00
Poultry, head	8,942	8,351	8,297	8,262	9,854	9,625	.924	1.180	1.160
Sub-total—Meat	------	------	------	91,658	112,108	131,215	------	------	------
Other Products:									
Milk, cwt.	87,680	90,803	88,870	144,437	232,894	251,003	1.645	2.565	2.824
Eggs, dozen	74,975	75,565	74,304	21,218	32,493	29,722	.283	.430	.400
Wool, pounds	2,818	3,219	3,310	527	773	1,754	.187	.240	.530
Honey, pounds	4,728	5,281	5,424	902	1,452	1,356	.191	.275	.250
Sub-total—Other products	------	------	------	167,084	267,612	283,835	------	------	------
Grand total	------	------	------	258,742	379,720	415,050	------	------	------

Purebred Cattle Number 140,000

Assessors were again asked to enumerate the number and breed of purebred cattle on farms. Total males shown were 42,345, as compared to 37,810 in 1921; females 97,347, as against 86,265 in 1920.

TABLE IV—CROP SUMMARY, 1922, WITH COMPARISONS

Crop	Area in Thousands				Production in Thousands				Farm Value Thousands of Dollars			
	Wisconsin		United States		Wisconsin		United States		Wisconsin		United States	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Corn, bu.	2,209	2,109.9	102,428	103,740	98,300	97,405	2,890,712	3,068,569	61,929	45,191	1,900,287	1,297,213
Oats, bu.	2,465	2,631.9	40,693	45,495	101,558	63,943	1,215,496	1,078,341	39,608	20,892	478,548	325,954
Barley, bu.	443	473.0	7,390	7,414	14,220	10,647	186,118	154,946	8,105	5,422	97,751	64,934
Rye, bu.	489	371.0	6,210	4,528	7,139	5,046	95,497	61,675	5,140	3,583	66,085	43,014
Winter wheat, bu.	95	88.5	42,127	43,414	1,767	1,415	586,204	600,316	1,820	1,378	614,561	571,044
Spring wheat, bu.	81	124.8	19,103	20,282	1,239	1,387	270,007	214,589	1,276	1,348	249,578	183,790
Buckwheat, bu.	25	40.3	785	680	360	602	15,050	14,207	313	450	13,312	11,540
Clover and timothy, tons	2,972	2,653.1	---------	---------	5,201	3,407	---------	---------	62,984	52,282	---------	---------
Alfalfa, tons	88.3	131.3	---------	---------	220	343	---------	---------	4,010	6,791	---------	---------
Other tame hay, tons	94.6	279.8	---------	---------	132	398	---------	---------	1,308	4,948	---------	---------
All tame hay, tons	3,154.9	3,064.2	61,208	58,769	5,553	4,148	96,687	82,379	68,302	64,021	1,217,044	977,527
Wild hay, tons	335	364.1	15,842	15,632	436	437	16,104	15,391	3,357	3,952	114,635	101,991
Potatoes, bu.	328	315.2	4,331	3,941	40,672	21,339	451,185	361,659	13,422	20,208	262,608	398,362
Tobacco, lbs.	40	47.9	1,725	1,427	45,600	61,406	1,324,840	1,069,693	9,120	7,648	306,179	212,728
Cabbage, tons	17	11.0	135	103	163	57	1,098	674	825	1,905	14,301	16,612
Onions, bu.	1.1	1.1	64	58	418	100	17,940	14,406	627	195	16,471	18,856
Hemp, lbs.	2.5	8.1	---------	---------	---------	6,400	---------	---------	200	400	---------	---------
Sugar beets, tons	12	19.4	[2]537	[2]815	111	171	5,243	7,782	471	1,194	29,605	49,626
Other root crops, tons	8	8.5	---------	---------	71	70	---------	---------	56	455	---------	---------
Canning peas, cwt.	72.6	58.7	---------	---------	1,540	788	---------	---------	4,158	2,292	---------	---------
Sorghum syrup, gal.	2	2	448	518	120	140	36,532	45,566	132	196	25,946	28,681
Dry peas, bu.	32.4	35.2	---------	---------	568	433	---------	---------	1,363	882	---------	---------
Dry edible beans, bu.	8	5.0	1,043	777	76	52	11,893	9,150	274	157	44,429	24,399
Soy beans, for seed, bu.	7.2	3.5	---------	---------	54	29	---------	---------	---------	---------	---------	---------
Flax seed, bu.	4	5.6	1,308	1,108	52	59	12,238	8,029	94	88	25,869	11,648
Clover seed, bu.	127	98.0	1,126	889	229	167	1,875	18,905	2,336	1,653	18,905	16,529
Timothy seed, bu.	8.7	12.5	---------	---------	40	60	---------	---------	120	162	---------	---------
Apples, bu.	[1]2,368	[1]2,339	---------	---------	2,204	1,050	203,628	99,002	2,388	2,541	201,592	6,323
Cherries, qts.	[1]359	[1]359	---------	---------	485	380	---------	---------	849	1,050	---------	---------
Pears, bu.	---------	---------	---------	---------	19	16	18,661	1,297	15	51	19,789	19,268
Cranberries, bbls.	2	1.6	25	25	62	29	562	384	620	386	5,720	6,526
Maple sugar and syrup (as sugar) lbs.	[3]538	[3]494	[3]16,385	[3]15,219	1,210	815	34,806	24,178	387	285	7,263	6,214

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[1] Trees.

[2] Including beets grown in Canada for U. S. factories.

[3] Trees tapped.

DIVISION OF DOG LICENSING

A. B. ALEXANDER, *Director*

History of the Dog Law

The licensing of dogs has been authorized by law, and carried out in many of the larger cities for years: (1) To help protect man and animals from rabies or hydrophobia. (2) To save domesticated animals and fowl from injury and death. (3) To prevent unrestricted dogs from becoming a nuisance.

Laws of this kind were good in their way, but failed to provide indemnity in cases where damage was done to the stock or fowl of farmers. Before the passage of the Wisconsin Dog Law, the stockman who suffered a loss had little chance of collecting for damage done. His only recourse was through court procedure, and when it is remembered that in a majority of cases the dog owner was either unknown or insolvent, chances of collecting any indemnity were negligible.

A law was needed which would create an adequate fund, out of which damages could be paid to those suffering losses through vagrant dogs. By taxing all dogs, in order to make this fund available, the farmer would be assured of compensation for damage done, regardless of the ability of the dog owner to pay indemnity.

In 1919, after insistent appeals from sheep and stock men, the legislature enacted a new dog law under chapter 72, sections 1623 to 1630, inclusive, and 20.60 (11) and (12). This law became effective July 1, 1920. Its enforcement undoubtedly bettered conditions in the state, but many points of the new law were troublesome, and the legislature of 1921 revised the law. In its new form the objectionable features have been eliminated, and the law is becoming more and more popular.

Effect of Dogs on Sheep Industry

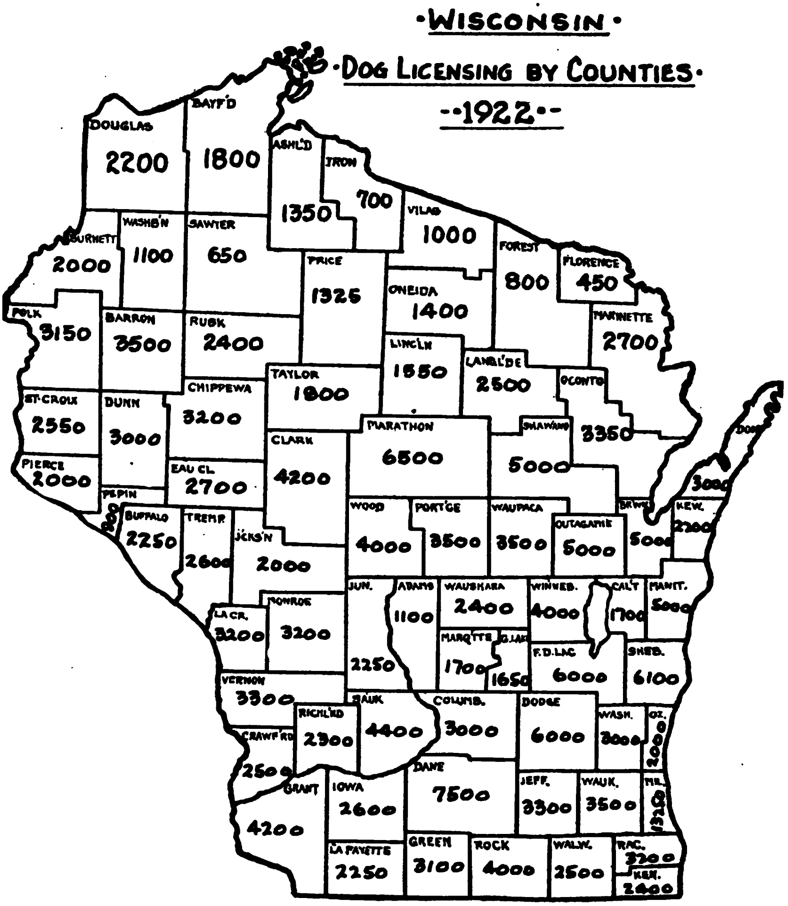
In 1913, crop reporters in 36 states submitted estimates showing that the number of sheep on farms in their states could be increased 150 per cent without displacing other live stock. This would place an additional 34,000,000 sheep on the farms of those states. Of 894 answers as to causes preventing such an increase, 531 reported "Dogs."

Increased population in the United States means increased demand for wool and mutton. At the present time, however, only about one-half of the wool used in this country is produced domestically. The scarcity of sheep means that one-half of our wool must be imported, although American farms could easily support enough sheep to produce all that is needed.

It has been estimated that in 1913 the loss of sheep in the United States due to dogs was approximately 107,000. With this in mind it is easy to imagine the effect of such killings upon sheep and stock owners. In many localities farmers are willing and anxious to raise sheep, but the depredations of dogs, and the uncertainty of a profit from their animals discourages any such attempt. The only method of dealing with the problem of the sheep-killing dog is through efficient legislation which will eliminate vagrant dogs, and make dog owners responsible for the wanderings and actions of their dogs.

Method of Enforcement

Under the provisions of the Wisconsin Dog Law, each dog owner is required during January of each year, to apply for and obtain a license for every dog six months of age or over. The fee for such license is $1.00 for a male or spayed female, and $2.00 for a female. Owners of


•WISCONSIN•
•DOG LICENSING BY COUNTIES•
--1922--

--NOTE: FIGURES BASED UPON NUMBER OF TAGS USED BY COUNTIES--

large kennels may obtain a special kennel license for $20.00, in lieu of individual licenses at regular rates. Dog licenses are issued by the town, village and city treasurers.

Assessors, except in cities of the first, second or third class, are required to annually list all dogs within their districts. In cities of the first, second and third class this work is done by the police force. The lists so prepared are used by the treasurers when collecting license fees.

Any dog owner who fails or refuses to obtain a dog license during the specified time becomes a delinquent, and is subject to a fine of from $5.00 to $50.00. Every sheriff, constable and other police officer is required by law to seize, impound or restrain any unlicensed dog found running at large. Dogs so seized must be delivered to the humane officer, and held five days, during which time the owner is notified. If, after five days, the dog remains unclaimed it must be disposed of in a proper and humane manner. Police officers who seize dogs, and comply with the provisions of the law relating to notification of owner, etc., are entitled to a fee of $2.00.

Delinquent lists are furnished to the district attorney by the treasurers, and it is the duty of the attorney to institute proceedings in the name of the state to recover the penalty provided by law.

Supervision by Department of Agriculture

While enforcement of the dog law is a county matter, the Wisconsin Department of Agriculture is charged with the supervision of the work, and is empowered to make necessary regulations for the guidance of county and local officials. The department also contracts for dog tags, and prescribes the forms used in dog licensing work.

Report for 1921-1922

The original dog law went into effect July 1, 1920, and by its terms, licenses issued on that date were to expire at the end of the following June. In the meantime the legislature amended the law, and existing licenses were extended to December 31, 1921. Under the original law, fees were $5.00 for a female and $3.00 for a male. For this reason the receipts from dog licensing were very large during the first period, and greatly exceeded the receipts which may be expected for any following year, under the new scale of license fees.

During 1921, circular letters were sent to officials charged with enforcement of the dog law, in order that all such officers might understand their duties, and the features of the new law. A bulletin covering the new law was prepared in 1920, and this was sent to all local and county officials. Newspaper articles were prepared and mailed to the state papers in order to acquaint farmers with the provisions of the law. At that time it was found that many farmers who suffered losses from dogs failed to make claims against the dog fund of their counties. The time limit is ten days, and often the claimant waited so long that the claim was outlawed. In such cases no payments could be made, because of the fact that evidence had been destroyed, and the appraisal committee had nothing upon which to base valuation.

In November, 1921, a questionnaire was sent to all county clerks, in order to estimate the amount of money paid in damage claims. Reports were encouraging, although at that time many were not yet familiar with the law. The following list of amounts paid in a few representative counties in the various sections of the state gives a general idea of the size and nature of claims:

Grant county, $3,736.20; 119 claims on sheep, cattle and hogs.
Dunn county, $1,414.40; 40 claims on sheep and cattle.
Dodge county, $3,060.38; 27 claims on sheep and cattle.
Pierce county, $1,164.01; 29 claims on sheep and hogs.
Waukesha county, $1,249.43; 31 claims on sheep and poultry.
Kenosha county, $1,158.30; 23 claims on sheep and poultry.
Chippewa county, $1,082.29; 137 claims on sheep.
Rock county, $1,007.80; 25 claims on sheep and poultry.
St. Croix county, $1,119.20; 25 claims on sheep and poultry.
Richland county, $946.60; 22 claims on sheep and horses.

The average size of the claims in different counties varied according to the stock upon which claims were paid. In some counties the average claim was as high as $117.00, while in others it was less than $30.00, because of claims paid on poultry. The average size of 913 claims picked at random from several counties was about $30.00.

Income From Dog Law

Under the provisions of the dog law all money collected, after deducting fees of treasurers and assessors, is forwarded to the county treasurer, and is kept in a special dog fund for payment of claims arising under the law. Each county treasurer forwards 15% of the dog license fees to the Department of Agriculture, for use in printing bulletins, supervising enforcement of the law, field work and instruction work. At the end of each year, any money remaining in the state fund is returned to the counties, to be distributed to the towns, villages and cities in proportion to the amount originally paid in license fees. The unused portion remaining in the county fund is pro rated back to the taxing units in the same manner. The money so returned may be used in any way the governing body of the local taxing unit sees fit. The following figures show the amounts collected and returned for the period from July 1, 1920, to December 31, 1921:

Total estimated income from dog licensing for period July 1, 1920, to December 31, 1921....		$467,000.00
State's share (15%)............................	$80,522.11	
Cost of operation............................	4,450.07	
Balance returned to counties...........	$76,052.04	
Claims paid....................................	$40,000.00	
Cost of operation, etc.........................	4,450.00	
Total cost operation and claims........	$44,450.00	44,450.00
Amount returned to towns, villages and cities for their use.................		$422,500.00

While figures for 1922 are not yet available, it is estimated that claims will greatly exceed those of 1921. Farmers who were not familiar with the law last year are now taking advantage of its provisions. The income from the dog law will be much less this year because of the smaller license fees charged.

Enforcement of the Dog Law in 1922

Before the licensing season of 1922, a new bulletin was prepared and mailed to all county clerks, sheriffs, district attorneys, county treasurers, assessors, town, village and city clerks and treasurers, city police officers and newspapers. Circular letters, giving detailed instructions, were also mailed at this time, and at various periods during the year. County clerks estimated that 215,175 dog tags would be needed for the year's work, and these were contracted for and delivered to the various counties.

At the end of January, when licensing should have been completed, the period was extended to March 1, upon application from several counties. This was done in order to have the license paying time coincide with tax paying time, which was extended in almost all counties. After March 1, 1922, all dog owners who had failed or refused to license their dogs were considered delinquent, and subject to fine. At this time delinquent reports, printed in triplicate, were ordered by the department and forwarded to all town, village and city treasurers. These were then filled in by the treasurers, and copies sent to the district attorney, county clerk and to the Department of Agriculture. All delinquents were then notified of their liability by the district attorney, and were given a chance to pay the license fee before any further action was commenced. In many localities it was necessary to start suits to collect the fee and penalty. It was usually found that whenever suit was started against one farmer, who acted as a ringleader in blocking enforcement of the dog law, other delinquents paid their license fees without further trouble. The delinquent lists in some counties included as many as eight hundred names, but these have been gradually eliminated, until most of the counties are practically 100% free of unlicensed dogs. Field work of the department has included visits to the officials of all counties, and cooperation in the enforcement work within the counties. From time to time new forms of summons and complaint, and new instructions to simplify enforcement work have been prepared and furnished to the county officials.

Adequate enforcement of the dog law can be obtained only through cooperation of the county officials directly charged with the work. Half-way measures are too often resorted to, with the result that delinquents fail to realize the seriousness of the offense. Strict enforcement will be accomplished when officials impose the fines allowed by law, in order to make an example of evaders. An example of this may be quoted in Oconto county, where three delinquent dog owners, who failed to pay license fees after repeated warnings, were each sent to jail for ten days. It is thought that no more trouble will be encountered in that county.

Conclusion

No law, however well worded, can be effective unless it is adequately enforced, and has the moral support of the general public. Opposition to the dog law is often found on the part of people who have given it little thought, and who oppose all laws that impose a license fee. The dog law is not a tax measure in disguise, but rather a form of insurance to protect the interests of farmers and stockmen. It assures them of compensation for damages done to their stock, and at the same time controls the vagrant and vicious dogs that formerly roamed at large uncontrolled. The sheep-killing dog constitutes the greatest menace to the sheep industry at the present time. By licensing all dogs, this menace can be largely removed. Any dog that is worth keeping is worth licensing.

> "The homes of a nation are its strongest forts. They are the things that will make a nation safe and secure and free, and every energy that is put forth by legislators and governments to make the men out on the land in any country helpful and useful will be the greatest effort that can be made in making that country great."
>
> BY DUNCAN MARSHALL,
> *Minister of Agriculture,*
> *Alberta, Canada.*

DIVISION OF IMMIGRATION

B. G. PACKER, *Director*
G. M. HOUSEHOLDER, *Assistant*

How the Immigration Division Has Helped

Twenty-three hundred and sixty-nine settlers located in Wisconsin during 1921-1922, most of them coming from territory covered by Chicago and Twin City newspapers receiving information from this division; 15,777 homeseekers asked advice, of whom from eight to eleven per cent report purchasing as follow-up is completed; and in these two years the immigration division has been compelled almost daily to caution intending settlers against land proposals where the man, family, pocketbook and the chances failed to fit.

How to use his limited capital wisely in developing, location, comparative fertility and problems of types of soil, the difference in length of growing season, school and road matters; methods of opening farms and new land crops for dairying are important subjects now being discussed by the immigration division with upwards of 16,000 inquirers responding to classified notices offering official service to homeseekers.

During the period covered by this report more than half a million dollars ($547,420) in purchase or equipment loans to settlers was made possible by the immigration division cooperating under the terms of the recent Land Mortgage Association Act. An amount, hard to estimate but probably more, has been saved intending settlers whose attention was centered on some "trade-your-city-flat-for-a-mortgaged-sand-farm-and-live-easy-the-rest-of-your-life" proposition. This division of the department of agriculture aims to keep in touch with the settler after he is on the land in order to obtain and perhaps to give suggestions mutually helpful. Individual reports of progress have been received from 2,016 new families telling of work accomplished, health of family, future plans and problems commonly encountered in development.

What They Have to Say

H. E. Dahleen

"Please send me or have sent two copies of the latest fence laws. I want these to send to two nonresident owners of land that border mine. I want to fence my land, and cannot get these parties to answer my letters in regard to fencing their half. I understand that they must fence their share. I moved to my present home near Crivitz last February. I have 80 acres and have cleared 30 acres; have 10 acres in rye. I like this country so far. I came from Illinois."

F. W. Hubel & Sons

"We are located near Gilman. All wild land when we came out on it last March. We have cleared and broke ten acres in time to grow crops on it this last summer, besides putting up a granary building 18x24 feet, a work shop (which we are using for a calf pen this win-

The settler carving out a home is doing his duty to posterity and deserves to be well treated by the state.

ter) 16x28 feet, a barn building 24x48 feet, besides some smaller shanties for immediate use. We are now living in the granary. We have 3 horses, 14 grade cows, 2 purebred Holstein cows, 8 grade heifer calves, 1 brood sow, 12 young pigs and 30 chickens. We have plenty of hay to winter the stock, but will have to buy the grain we feed."

George P. Klein

"I have 80 acres 3 miles east of Sheldon. I have got the timber and brush off 10 acres this summer and wanted to get the down logs piled and burned and get the ground seeded this fall, but did not get logging or seeding done, as I have to depend on hiring my work done at present. Now, I want your advice on the best way to get it seeded this spring. I am going up to look after getting the work done at the right time. I have read of sowing oats and peas with grass seed, but being strange with your country I would like your advice or somebody you can recommend."

After all, in spite of its drawbacks, good seasons and poor, chinch bugs and army worms, prices high and prices low, is there any occupation or profession so uniformly successful in its truest sense as farming has been in the past, is, yes even today and promises to be tomorrow? If so, what?

C. L. Less

"We are preparing to come to Wisconsin this spring, although we have less actual cash to start on than we would wish. We have a machine to carry us there, a truck of our own to carry our goods, and 40 acres paid for, and will take a chance—Columbus did. We are willing and able to work."

Earl Arnold

"I now have located on my land near Irma. There is no question in my mind about stock raising, it is to be the backbone on my farm, but the biggest question is how to get started in stock on small capital. Kindly advise me in regard to the kinds of crops to grow, about corn, and the variety, also the best place to buy good seed. Also whether hogs can be raised here at a profit and how to handle them."

A. Blatter

"Father and I moved on this place near Bruce last December from Dodge county, Wisconsin, where we made cheese for the last 10 years. Here we bought a cheese factory and 80 acres, which we expect to clear as soon as possible, and surely need your help. Around here are mostly new farmers and this section is developing rapidly."

Fred Henning

"I bought 56 acres on the south shores of Crawling Stone Lake, which lies 10 miles west of both Minocqua or Woodruff and about 4 miles south of the village of Lac du Flambeau. That country is settling up fast, with summer homes, and I wanted to know if you recommend fruit and of what kinds and brands, grapes, raspberries, blackberries, vegetables."

F. E. Pease

"I am now the owner and occupant of a brand new farm near Minong, purchased June 8, 1921, with cottage and 20 acres under plow. Cutting rye today and ready to reseed to Grimm alfalfa. Will be ready for some real farming next year and will then be ready to report my opinion of the farming possibilities of this section."

F. W. Freund

"I have cleared 10 acres on my place near Long Lake without a stump on it and under the plow. Some I seeded to fall grain and grass seed, and the rest will be planted this spring. I have enough hay to hold me over this winter. I have a team of horses, a cow and heifer to feed. I raised a few potatoes and some oats last fall, and fattened four hogs from odds and ends, I managed to get planted this last summer."

Joseph Schaparzek

"I have moved near Solon Springs a year ago last summer and about 2 weeks ago we lost one of our horses and my neighbor also lost a horse and 2 more neighbors have horses down with the same disease. They had a veterinarian out there from Superior and he says it is a new disease. They don't understand it yet. Don't you think this matter ought to be looked into? Those people cannot afford to lose horses like that."

H. Edw. Moore

"In our community here near Cameron we have many social gatherings during the winter and picnics occasionally during the summer. We also have a Social Center Society here which meets one Friday evening in every month at the schoolhouse and we have entertainments given by our local talent. If you have any bulletins for free distribution giving games and methods of home entertainment as a help in home party gatherings these cold winter evenings, I would be pleased to receive same."

John O. Walter

"It has been some time since I have written to you from Clinton, Indiana. Now I am writing from Lakewood, Wisconsin. I would like some information from you if you can give it. Am told there is a state tax law that an actual settler is exempt from taxes for the term of 3 years. If you can give this information I would like it."

Chas. Overman

"We like our new location 1¼ miles west of Wausaukee on the Perch Lake road. If you have books of interest to a new settler, we would be glad to receive them."

Helland Bros.

"We bought 80 acres, W½ of the SW¼, Sec. 27-46-6, Mason, Wis. We will appreciate any advice you can furnish us. We intend moving around the 10th of February."

The first school house in a new settlement.

Gust Wegner

"I have bought 60 acres in Clark county in the town of Longwood, Sec. 11, R. 2, W. T. 28. There are no improvements on it. I intend to improve it soon and would like to get some suggestions on how to lay out the farmstead. I intend to remove the stumps with dynamite, as I had considerable experience along that line and it is the cheapest, too, your own time considered."

Bernard Gust Johnson

"Please send me more information about clearing and first crops on new land. I want this before I locate on my land in Bayfield county."

Edw. S. Peterson

"I am a new settler near Port Wing and would like to know how alfalfa would grow in this part of Wisconsin and would appreciate all the information I could get."

L. C. Somers

"I was advised that immigrants actually living on their land would be exempt from taxation for three years. I moved with my family to our place in Burnett county, March 31, 1921, having bought this place in October, 1920. Is this land exempt from taxes?"

J. H. Willemssen

"I purchased 6 miles north of Bloomer. We have a nice piece of ground, but haven't any buildings on it yet; some clearing to do, but there is no brush, all clean hard wood, so tell me what you can about clearing and cleaning such land."

Geo. W. Knowlton

"I bought near Hannibal. I have been told that we have no fish in this river owing to the fact that a dam has been built at Cadott without providing a fish gate. What can be done in regard to the abandoned dam and what is the law in this state about the Cadott dam, that is, in regard to fish gates in dams?"

John Kieffer

"I shipped a car of oats from my farm in Canada to my farm 4 miles west of Comstock. This oats is for my own use for feed and seed and. I made out the papers to that effect and they charged me 6 cents per bushel duty and I would like to know if there would be any chance of getting this money back."

Claude R. Lowe

"Am located near Mountain, and would like to know if there is a law against shipping in hay full of Canada thistles and quack grass, as the stores here are doing. It seems a shame to have a new farm and have to use that kind of hay as it is sure to reseed all over the new land."

E. C. Grimes

"I am planning to open up my land 10 miles northeast of Rhinelander this spring, the soil being a sandy loam. What can I get for summer forage? What do you think of Canadian field peas?"

Robert Taft

"I bought 80 acres in the town of Roosevelt, Burnett county, and am interested in getting started. If the Department of Agriculture will place my name on their mailing list and send literature it will be appreciated."

M. A. Sharp

"I now have 160 acres near Holcombe, Chippewa county. It is sandy loam and with good drainage. Would it be best to buy a tractor and prepare 40 acres for plowing, or to use the same money to cut 80 acres or more even with the ground and seed for pasture?"

Mrs. H. Trepkow
"We have received helpful information from your department in the past and are writing for more. We own an 80 not far from Kennan, Price county. Do you know how near the proposed State Park will come to this part of this? We expected to have some clearing done, but if it is to be used for park it will not be a wise thing. If we should do so, can potatoes be planted in new soil? How late?"

C. G. Andersen
"I intend to go to our farm in Douglas county the first of May. Would like to ask you if there is any cheaper freight."

James H. Miller
"Kindly let me know of the most up-to-date methods of handling and digging a crop of potatoes. If there is a better way than picking them up from the ground, I would like to know it."

John A. Nelson
"Kindly send me more information about land clearing, dynamiting and stump pulling. I have bought 80 acres in Bayfield county."

B. D. McKyes
"While up to my land near Wausaukee last summer, I heard about a law allowing a settler to pull out sunken logs or "dead heads" of the Menominee river for their own buildings, not having to deal with the company who own many of the sunken logs. Is this true, as I want to build on my 80 acres in Middle Inlet township?"

F. J. Williams
"In 1918 when I was living in Iowa I wrote you for information in regard to northern Wisconsin. On February 2, 1918, I received your reply and have it before me now, and, as you will see by my address, I am living in northern Wisconsin, and we like it. We are milking 14 cows, but each day I find there is more and more I would like to know, as farming here is somewhat new to me and reading your letter over this A. M. I found just what I wanted when you say, "Cast aside all formality and ask whatever you desire to know," which I am doing. We first want to know how to feed separated milk to calves and pigs successfully and if it will pay us to build a silo here."

George Greaney
"I bought 80 acres near Stone Lake, Washburn county, Chelsea loam, no stones to bother. Located May 27. Built house, log house 14x28. Ten families went in last year. Have brushed 5 acres."

Jacob Degenhart
"We bought near Holcombe. Now what I would like to know is where we could get some dynamite and some cows."

Jacob L. Jentges
"I bought 80 acres near Conrath. Last fall fire went through it and this spring a good share of it was seeded to timothy and clover, of which there is a good stand. I have cleared 4 acres ready for the plow and expect to get it broke with a tractor outfit owned by Mr. Frank Conrath here."

Carl K. Fortson
"Glad of the opportunity to write you a note and say that we came out here in May and like it. We appreciate the opportunities Wisconsin affords one. We are now living about 9 miles from Stratford on R. R. No. 2."

Ernest E. Smith
"We are in Wisconsin near Stratford and like it. We have been helped by the literature we have received."

W. H. Bovee

"Would you kindly send me the information needed for a new settler in the northwestern part of Wisconsin, Washburn county? We have bought 80 acres near Hayward and intend to move onto the place next year."

Edw. A. Mueller

"I bought a farm in Dane county bordering Lake Kegonsa. As I have much to learn I would be grateful to you if you would send me bulletins about care of farm animals."

John Berger

"I have purchased a farm 2 miles east of Grantsburg, 160 acres in home place and 40 acres meadow. This farm is pretty well run down. What would be the best and cheapest way to build it up? The land is some clay with some mixed clay and sand to sandy."

Northern Wisconsin's settlers want a chance to work, to protect their own and however humble, they want a home.

Lee Row

"I am now living in Wisconsin and own a quarter section and realize that my chance to make good is just as good here as any other place."

A. Gliseman

"I now have 40 acres near Bavaria, Langlade county, 15 acres open old timber camp. Bought in September, 1921. What about tax exemption? Will move up in spring of 1923."

Andrew Larsen

"I bought 40 acres in Rusk county. I would like to know what is best to put in next year. The land is new broken land, black soil and clay under."

Emil Klip

"I have bought in Columbia county near Columbus. If you have a soil map of Columbia county I would appreciate it."

Fred L. Tucker

"I bought in Oconto county. I thought of sowing about 3 acres of oats, and seeding down 2 to alsike and timothy mixed, and 3 acres of Wisconsin number 25 corn and soy beans and 2 acres of potatoes. Do you think this would be a good crop for this year's feed? And what would you advise me to put in the remainder of the ground? I am expecting to feed a team of horses and 2 cows and about 100 head of chickens."

H. H. Griffith

"I purchased near Balsam Lake. Neighbors up there are kind and helpful."

Geo. J. Lindner

"Last fall I purchased 80 acres near Gleason. I have now made an exchange and have taken only 40 acres of this tract. I have heard that a new law has been passed for the settler that has 40 acres of cut-over land. The settler that has 40 acres without improvements will not have to pay any taxes for 3 years. I am not sure if this has been made a law or not, but I would be trankful if you would give me some information about this new law and to whom I would have to go to claim tax exemption."

Robert C. Rich

"My wife and self and collie dog left Chicago April 9, 1921, for our new home at Interwald, Taylor county. Before night we ran into a snowstorm and stayed in McHenry all night. Sunday we passed through Madison and we got along all right until we had passed Baraboo. We were driving a Maxwell roadster, quite heavily loaded, and then the mudholes commenced to bother. We had to get pulled out 21 times before we reached Interwald Tuesday evening, April 13 One night we slept in a corncrib and on Monday night with a really genial farmer and his wife and Tuesday night in McCluskey barn in a pile of straw. It froze quite hard every night, but we had plenty of blankets and did not suffer any. On April 20 I had a shanty up and on that afternoon what few household goods we had shipped arrived and we unloaded them just in time to escape a downpour of rain. We have 10 acres of fairly good plow land, one-third of which was seeded to timothy and clover and yielded fine. We have 30 acres of cut-over land besides. I built a barn 16x16x12 and a shed 16x16 for hay; also a shed on one end of the house for the car, etc. Dug a well and have fine water. Raised some potatoes, 40 bushels, peas and oats enough for horse and cow, with the hay to last through the winter. Also some fine carrots and garden stuff. Also some splendid corn fodder. Have 20 chickens which we raised. We ran short of funds about June 10 and Mrs. Rich went back to her old job in Libertyville and stayed until January 20. What she earned put us in better shape. We had a poor year so far as crops went and have had a winter like we used to have "when I was a boy." But we're going to stay. We are 10 miles from the nearest town, which we find is a handicap at times. But we like it here. Our county agent, R. A. Kolb, has been a great help, too, and we have neighbors that are really real. I am 53 and my wife is 48. I have a crippled back, but have done all my own work alone except haying and cutting down trees. Have sawed all my own wood with a one-man saw, and even if they did throw me out in the big shops because I was over the age limit of 45 years, I think we are making good here. I have made some mistakes, of course, but I'm like the boy when the mule kicked him, "I'll know better and dodge next time."

J. E. Renner

"I am located near Jump River now and am on the "job." Any assistance given me in the future, through bulletins or in any other way, will be appreciated."

Mrs. Ella Nelson

"As I have had a bulletin and some other literature sent me I must let you know I purchased a farm in Rusk county and if you have a bulletin or some other literature that would be of interest I would be obliged.

Floyd Marion

"I have been up in Forest county something near 18 months and am glad to state I am pleased with my tract of land."

H. L. Rohe

"I bought 4 miles west of Amberg on the Pike River. I built a house on high ground right by the river on the south side. The land runs a mile west to Glen Lake. Nearly all high ground. Have already broken 25 acres and will clear some 30 acres more this year. Am putting up a closely woven wire fence, so no dog or wolf can get through, with hog barb wire right on the ground."

Frank J. Frish

"I wish to state that I have been farming 1½ miles east of Friendship for about a year. I hope that you will excuse me for not writing sooner, but I thought that you would write one or two letters and let it go at that. I wish to congratulate you on your follow-up system."

Herman Nyquist

"Just wish to let you know that I am already a farmer near Maple, Wisconsin. Have been here a year or so. I have 30 acres under plow and like it."

Joseph Freeland

"We are now in Wisconsin. The last time you wrote me we were in Clinton, Ind. We like the country and have started clearing. Would like to know if we could buy dynamite any cheaper from the government or substitute."

Rudolph Goosela

"Have been pretty busy clearing. Arrived in Wisconsin about a year ago from Oregon. Located on a 40 two miles west of Pearson. I like Wisconsin better than Oregon."

C. U. Bouslough

"I am glad to advise you I came to Wisconsin last spring, 1921, and like it so well that I bought a place here."

Chas. F. Spach

"I have bought 40 acres here at Holcombe. I would like to get 500 pounds of dynamite. Kindly send me your literature on clearing."

Walter C. Nelson

"I was in Wisconsin for thirteen minths, roughing it. I'll say here that being initiated into one of Wisconsin's snappy winters was great at times even though I did have many handicaps. I bought 80 acres near Tioga and have cleared about 6 acres and seeded down 9. I have always liked your state and am confident that the feeling will always stay with me. While there I took the opportunity of asking for a number of bulletins which the state gives out and obtained information that I hope to put in practice."

Edgar Van Horn and Settlers

"Having arrived in the state of Wisconsin will write concerning our opinions. We all like it here and everybody is in love with the country excepting the roads. We all, 17 families, have a fine start made and expect to settle in this state, but some of us will go back to the mines this winter and come again next spring to stay. We believe that this is the surest way to begin, as some fail because they bite off too much at first."

"Away from the city's grime and strife,
Away from the care of its daily life,
Away from the vice it's sure to breed,
Away from its growing grasping greed."

R. W. Cooper

"A little over a year ago I purchased in your state and have made several trips to it. I do not want you to worry about me, for when I come to Wisconsin and am in need of any help that your department can give me I shall probably bother the life out of you."

Gustav Fischer

"I bought a farm together with my brother on Sand Lake. Fifty-four acres, 20 under cultivation. Am satisfied with the land. We broke 1½ acres of cut-over land this spring. Now we broke some more for sugar beets and millet. Mr. Maurer also bought 40 acres one mile from here. I am trying to help to settle this country."

M. Anthony

"I am still a settler 5 miles north of Butternut, Wisconsin. If you have any literature on the Schwartzkopf (American Blackneck) goat I shall be grateful."

A. M. O'Rourke

"I bought 80 acres at Eagle River and expect to move soon. I would like to have some literature on how to clear land and cultivate it and if you have any on bee raising, would like to have that also. I expect to do truck gardening to a certain extent, especially till I get started. I would like to know where I could procure fruit trees and what kind of fruit could be raised up there."

John Kieffer

"I left Saskatchewan and bought 120 acres in Barron county, 8 miles from Cumberland. Would you please find out for me if there is any embargo or any duty on Canadian oats."

Clifton A. Crawford

"I bought 80 acres in Langlade county, Wisconsin. Will you please inform me what crops are best adapted to this farm? Also what kind of cows I should purchase. Send me information in regard to the schools in Wisconsin as I have three children to start in the fall."

James R. Owens

"I bought in Oneida county on Squirrel Lake. Would like to have a road open to the land and would like to know to whom I must apply for same."

Ted M. Ternes

"I purchased 40 acres in Langlade county. Please send me something about poultry house construction."

Daniel Heroy

"I bought in Marinette county. I really wanted to come there to live this last spring, but decided that I had better stay here another year and get a little more finances to start on."

Iver A. Sorenson

"I bought a farm of 119 acres with lake frontage, 50 acres under cultivation. I wish you would send me a book about silos and how to make one."

Harold A. Duke

"I bought in Marinette county near Wausaukee, Wisconsin. We are thinking of settling up there this coming spring and as the soil is different from here in Illinois would like to know more about it."

E. L. White

"Some months ago I wrote you that I had decided to take up poultry farming in your state. I intend to start on a small farm near Ft. Atkinson."

Alois G. Mikula

"We bought near Knowlton. I wish you would send me a map of Marathon county. I have checked the bulletins and circulars, hoping you will send them to me."

John O. Walter

"Expect to come up to Wisconsin about May 1st. I bought in Oconto county about 4½ miles to Lakewood. I hope that I can make good up there."

Emil Sirp

"I recently purchased in Marinette county and there is a question about location on which I would like to have your advice. When a person purchases land it seems logical to me that it is up to the person selling it to show the purchaser the exact location of the boundary by means of stakes, etc., and if necessary to have it surveyed. Kindly let me have your opinion on this matter as soon as possible and oblige."

Lewis E. Allen

"I bought the southeast forty of section 3, township 33, range 21 east. There is about 25 acres that is clear of all underbrush and down timber. Your soil maps and bulletins are a help in selecting land."

Edgar Thomas

"I made two trips to Wisconsin last fall and bought a small farm near Wausaukee and am packing to move about March 15th. Would be thankful for any information that you can give me about opening the land."

Frank Wright and Jacob Schiller

"Well, we got here at last. The snow is melting fast. We ordered our lumber this morning 8 miles from here. We are paying $25.00 for a thousand feet of hardwood. I have met quite a number of the new settlers. Most of them are from Dixon, Illinois, and one from Ft. Wayne."

J. Frank Wisherd

"As I am moving to Wisconsin would like to know the rules and regulations in regard to settler's effects. Expect to ship two cars of stock, horses and cattle."

W. L. Holzbauer

"My son-in-law, A. F. Thompson, bought 160 acres on the Wisconsin River near Grandfather Falls, and we are going to work this land together. He has about 4 acres cleared and stumped and about 12 acres more all cleared, but not yet stumped. It is good sandy loam. He is now cutting hemlock which goes for pulp, 50 cords of which he has sold for $12.00 a cord delivered at the switch, which is about a mile and a quarter to haul. We have a team, a fair log barn and a fair log house to live in. Al and a neighbor took off about a thousand dollars worth of cord and pulp, all sold, this last fall and winter."

Karl Kemper

"I have been up here in northern Wisconsin since September, 1919. We, my father and I, have 120 acres of 'wild' land at the present time. Just temporary buildings now. About 3 acres plowed last year, the first year. Some 6 or 7 acres next year ready for the plow. We have found Rusk county a very good place to live."

Started at Sheldon eight years ago. Building material from his own land except doors and windows.

Andrew Mason

"I no longer live in Whitewater, but have moved to Phillips. I bought an 80-acre farm here and have lived here since last May. The crops grow good here, but the last summer there was quite a bit of frost around this part of the county so that some crops were frozen. We will be glad to get any information about this county from you some time."

Jesse Keck

"We have located in Rusk county 6½ miles south of Ladysmith last fall, November 1st. Like the country so far. Have had a splendid winter. We have cut some wood and brushed about 15 acres and hope for a prosperous summer."

Frank Harvey

"Since making inquiries at your office concerning Wisconsin have bought a dairy farm near Rudolph, Wood county, and any information of value to that locality will be thankfully received by the manager, Mr. Claude Kain, Rudolph, Wisconsin."

Donald A. Leigh

"Just a word to advise that I purchased last fall near Frederic. I am confident there are opportunities in this section for sheep on a small scale. Believe small flocks well cared for can bring good returns. It is gratifying to know that your division keeps in touch with us as individuals."

Michael Newman

"Last fall I bought 80 acres in Ashland county near Marengo. What are the best crops to be raised?"

John McKee

"Having written to you some time ago from Edgerton, Wis., about Wood county, I have bought a farm here near Wisconsin Rapids of 80 acres. I would like to know what the best crops to raise on it are, if alfalfa would grow here and when is the best time to sow seed."

Joseph Yaspelkis

"I will be glad that you keep in touch with this company for my protection as you have told me to do. I believe state government better than anybody. Please give me some advisement how I can secure some stock to start right away. I expect to move after two or three weeks from today. The mentioned land is situated in Glidden district close to Chepevo river, eighty acres with some buildings and little cleared land."

Walter H. Riepe

"I have started a family at clearing and farming my land in Florence county. Would you be kind enough and send some literature that might be of some help to them."

Mr. and Mrs. C. M. Lester

"The fall of 1919 we purchased 160 acres in Taylor county, Wisconsin, and the fall of 1920 we came up and put our buildings on which consisted of a house, a barn and a milk house. Then February 7, 1921, we landed here with cattle, machinery, horses, household goods and grain and other things too numerous to mention so I guess we are here all right. Besides I (Mrs. C. M. Lester) about a week ago bought another 40 on the state highway between Hannibal and Donald. We like the country and the people."

Heinz Schroeter

"Do you still remember the young fellow that came into your office about two weeks ago and wanted to get some information in regard to new land? Well, I bought a 40 at Arnold. Can you furnish me some bulletins on cucumbers for pickling purposes, identification of different trees, and the use of different woods from trees."

H. L. Heath

"I made a trip into Marinette county on October 31 and November 1 last, and was very much pleased with the outlook there. I bought 80 acres of land about 20 miles north of Marinette. I am hoping to be able to move up there next spring. I took the soil map and bulletin which you sent me and selected what you described as the heavy sandy loam with calcarous subsoil."

J. A. Heckinger

"I thank you for the interest you have taken in my welfare which you have done ever since I entertained the idea of taking up a farm in Wisconsin. You surely have done about all anyone could do to make a person feel at home in your state and always willing to help him. That's the kind of work that counts. I purchased a farm near Lodi."

Henry La Caeyse

"I wrote quite often when we resided in Kewanee, Illinois. Now we are in Wisconsin and I am coming to you again for advice. Could you tell me how long you have to be a settler before you can get a road here to our place?"

A. A. Paddock

"Please send Wisconsin bulletins about soils, climate and crops. I bought in Oneida county."

C. W. Wentworth

"I now have a farm of 80 acres at Parrish, Langlade county. Thanks for the interest taken."

John R. Hoglin

"Just a line to let you know that Sunday, April 3, 1921, I will be on my way to Wisconsin to settle permanently, and will appreciate any advice that your department might give as to how to break new land and what kind of crops should be grown on certain soils."

Ernest Smith

"I bought 80 acres near Unity last fall. I don't know much about Wisconsin farming. Was raised on a farm, but have not farmed any for 12 years, so you see I have lots to learn. So I will be glad to get all the information I can because I will need lots."

H. L. DeLeano

"I am and have been for the last year a resident of the best state in the Union. Let the good work go on. I am located near Barronett."

James R. Truax

"I have bought a farm in Washburn county near Shell Lake and wish to thank you for the courtesies and information kindly sent."

S. J. Steerner

"I came to Wisconsin when quite young, 50 years ago, in Richland county, and I lived there with my parents for four years and then moved to Vernon county and lived in that county forty-five years and then came the moving on a new farm in Lincoln county—the south half of Sec. 25, Town 32, Range 8, East. We arrived here May 6, 1920, and have been so busy building house, barn, fences (and we have built 550 rods) and last, but not least, clearing the land. We will have 5 acres in crops this spring, of which 1¼ acres is stumped. We have 12 head of cattle and 2 horses and like it here all right so far. Oh, yes, I almost forgot to say we have four children at home, one boy 17 years old and three girls, ages 7, 11 and 13 years. So you see I believe in Wisconsin and think you can make good here."

"It is not simply beets and potatoes and corn and string beans that one raises in his well-hoed garden; it is the average of human life."

L. A. McDowell

"I have 80 acres of land in Price county and 110 acres in Vilas county, which I am having cleared and improved and some day I am going to live on the Vilas county place and then I will ask the Department of Agriculture for all sorts of assistance and information."

H. C. Martin

"Mr. Woodruff and myself, Mr. H. C. Martin, have moved to Wisconsin. We bought last fall and moved there the 15th of February. Mr. Woodruff drove our car there and I went in box car with furniture, team of horses and chickens, so we are doing business already and have 14 head of stock and nearly all machinery we need and have good neighbors to coach us."

John Lang

"A friend and I bought in Taylor county. We have friends also interested. I shall be pleased if you will kindly send me soil map of Taylor county."

Peter J. Felton

"Will you kindly inform me if there are any land clearing companies in Wisconsin? I have 60 acres of land near Glidden, Ashland county. I would like to have about ten acres cleared if possible. Would also like to hear from a builder in that vicinity."

R. C. Hoyt

"We bought our Rusk county land last year, moved up and have 10 acres cleared and seeded."

Fred Nystrand

"We traveled northern Wisconsin and bought 120 acres 3½ miles southeast of Hawkins in Rusk county. My brother is up there now trying to get a start on it."

G. N. Bliss

"I purchased a 60-acre tract seven miles east and north of Eagle River at the north end of Bass Lake. Have about 16 acres of it cleared, and, while I have not yet moved, my wife's parents are living on the place."

L. W. Kehoe

"Now what are we to do to get this road finished passable for a team and wagon. Where can I get information on roads and fence laws of Wisconsin so we know where we are at?"

F. C. Weber

"I purchased 160 acres in Forest county. When I made this purchase I thought I would make enough money to start the clearing of this land this year, but as business has been dull, it is necessary for me to defer this work."

Roy E. Addison

"Came up here in Elcho township, Langlade county, and bought 80 acres east of Post Lake. So far we are quite well satisfied. Have about 10 acres under cultivation and expect to more than double that amount next year. Any information you can give us will be appreciated regarding crops, markets and so forth. Thanks for the interest you have taken in me. I hope it won't lag now that you have me up here."

E. F. Wagner

"We wish to thank you for the interest you have taken in us as newcomers. But, then, what good will the good roads and schools do us if our children cannot go to school? So we wish your advice on what to do in order to get a road through."

H. D. Erickson

"Glad you take interest in what we are doing. I bought 60 acres in Burnett county and the crop looks good. But there are many things that I don't understand and I hope you can give me some advice."

Sam Grubb

"We like it at Crane. I have not broke any land on my place yet, but have five acres that we will begin breaking next month and are going to let it lay all winter."

Michael G. Krawczyk

"I am notifying you that I selected 80 acres in Marathon county and wish all information on general farming, and as to my wife and children, they will be interested in poultry, orchard and garden. I am going to move on my 80 August 15th, so send all mail to Knowlton."

Weiswinkel & Granberry

"We thank you kindly for the encouragement and advice. We are building a row of summer cottages around Lake Spellerberg of logs, also our own home, barns, henhouses, etc., for dairying, poultry raising and gardening. We will shoot about 500 pounds of picric acid and dynamite this fall and hope you can advise us as to our road and how to go about it to secure a necessary outlet for next years work and crops."

L. L. Dowd & Son

"When I wrote your department for information relative to Clark county, Wisconsin, it was not that I had any idea of changing my residence. I had a son-in-law who was talking of locating near Neilsville, Clark county, and I, of course, was interested and wished to learn something of the country there. Will say they are now on their new farm there and so far are well pleased."

J. E. Wirth

"I purchased land in Marinette county, Wisconsin, and expect to leave here about October 5th, with the intention of clearing up a portion of it this fall and seeding it down."

F. G. Wyman

"Charles Wyman bought 60 acres of land up in Taylor county, near the town of Gilman, this spring. Send anything that you think will be of interest to him to that address. He is a youngster yet, not having turned his twenty-first birthday, and although he lived on a farm up to his sixteenth year, he has much to learn in the handling of wild land that he has on his hands now."

W. L. Olson

"I have bought and intend to leave for Mosinee about the 20th of this month with my family."

R. L. Hovde

"I am interested in intensive farming and have bought 11 acres in New Richmond. Will you kindly put me in touch with someone that can assist me. Reference to bulletins pertaining to intensive farming, especially to potatoes and strawberries, will be much appreciated."

Bert F. Koons

"Have had barn and house built and 10 acres cleared on Pike River plains near Dunbar and am planning on moving on land in the early spring, about the 15th of April."

F. M. Chapin

"I visited Marinette county and bought. If all goes well son and I will go up next spring and make a start on our land. Mrs. Chapin will come later."

Hans Ryen

"Yes, I am interested in Wisconsin. I have a brother that moved to your state a few weeks ago, also my brother-in-law moved to Luck. It sounds good if it isn't all 'rock and rye.' I am more interested in dairying than anything else. What kind of dairy country is it around Luck?"

Arthur Brooks

"I recently purchased an 80-acre farm near Monico, in Oneida county, Wisconsin. Having farmed recently in Illinois I am not familiar with the best varieties of grain for Oneida county. Any information you can give me on fertilizers suitable for the sandy soils of that section will also be appreciated."

R. V. Lynch

"I bought 80 acres in Polk county and intend to move in March. I would like information about building a cow barn."

B. A. Lane

"I purchased a sixty on the Wisconsin river, three miles south of Tomahawk. Any help or advice that you can render will be greatly appreciated."

Fred J. Losby

"Have bought Lot 1—30—41—2 East, Iron county. If you have any information on developing same, kindly send it."

G. L. Hamilton

"Please inform me how much picric acid each settler is allotted and how to apply for same."

Fred Fore

"I have not given up coming to Wisconsin, but think that as long as I can get $37.80 a week with an extra bonus of from $5.00 to $10.00 I had better stay here at Bremen, Indiana, for a while until I get more cash ahead. My land is all paid for."

Martin Sievers

"I moved on my land near Crivitz in May. We enjoy good health and crops are good."

Mike Perat

"I bought near Withee. We have been here since February. We have about 10 acres clear and we have quite a bit to clear yet. It is quite hard for starting."

Frank Watkins

"I have bought 80 acres in Oneida county and in Cassin township. I have joined the potato growers' association and feel that it is a great help to a man who has never grown potatoes. It is quite different than growing corn and oats. I have cleared and plowed six acres since I came up here besides putting in 13 acres of potatoes and 7 acres of oats. I feel as though I could make good in Wisconsin if my family and I have our health. I sure am going to try to anyhow."

R. A. Stewart

"I am here in Rusk county and like it fine. It was partly due to the department's work that I came into the state."

David Danielson

"I spent the last four months in Douglas county where I have cut-over land. Any information on how to start will be appreciated."

H. F. Brelsford

"I was thinking you had lost track of me, as it is just about one year ago when I was writing you about every mail. I am satisfied so far. It only takes hard work. I was fortunate in choosing my location near Holcombe, and appreciate that conditions here are different. In looking over the list of your publications, I did not find any that a farmer, especially a new farmer, should not have, so if it is not asking too much I would like a full set. Am located in Chippewa county."

L. A. Edwards

"We left Indiana March 1, 1921, arriving up here near Stone Lake a week later. We find Wisconsin a good place to live."

Frank Dufour

"I bought near Wabeno and Soperton. When I bought this land there were no roads yet, and, of course, I do not want to go out where there are no roads. Am hoping the road will soon be laid out for travel. I am expecting to go out next spring to do a little improving."

Herman Goering

"In reference to our correspondence will tell you that I bought 80 acres in Chippewa county near Holcombe. Send me some more booklets about land clearing."

A. E. Walters & Son

"We are at Sheldon. Yes, we seem to be in a place where everybody works, even father, but it goes all right if a fellow don't lose his head and keeps working and trying to make more. We have about eight acres under plow and nearly all planted. Next year we expect to have about 25 acres under plow."

Bert Thornton

"I came up here last fall and bought 60 acres at Holcombe and am well pleased with the land, the clearing and soil. I am pushing my clearing and expect to have 20 to 25 acres cleared all but stumps by next spring."

Fred A. Kreger

"Just a line to let you know that I bought 120 acres in Post Lake, Wisconsin, last October. Have 3 cows, 3 calves, 2 pigs, 60 chickens, a good team, disc, harrow, plow, cultivator, auto, buggy, and the determination to make it go. Have now eight acres under cultivation. My 120 acres are all fenced in. I worked in the woods and earned $300 and am earning $4.00 a day when I can be spared from my farm."

Mr. and Mrs. A. Bergert

"We are living 8½ miles from Crivitz, Wis. Have lived here a year and a half. We have 80 acres of raw land and have good land. Most of it can be farmed; in fact, all of it can be, but have to pasture some. We have had an awful dry spell this year, but crops look good at present. We have about 25 acres broke up now."

The hope of the world: The rural school is the greatest influence for democracy in American life. The state aims in furnishing a safe, comfortable and efficient transportation to settler's children.

J. D. Granberry

"I found that desirable land around Tomahawk was selling from $30 up, mostly up, and thinking that was a little too steep for wild cut-over land, didn't purchase. I have 150 acres here southwest of Morse, Wisconsin, on Lake Spillerberg, which cost me around $16.50 an acre. Lake frontage, good land, long terms to pay. We figure on developing a dairy farm and summer camp."

F. J. Siggelkov

"Am writing to let you know that I visited Wisconsin and purchased in Clark county, 14 miles from Marshfield. This is mostly wild land that I bought and I intend to fence it this fall, so I can pasture it next year. I am a young man 23 years old and always lived on a farm in Iowa. My father has some very good land in Iowa which produces 3 tons of hay per acre and 50 to 70 bushels of corn. He owns over a section of land. But for me, as being a young man, I believe Wisconsin is the place to go and grow up with the country the same as my father has done there. The Department of Agriculture is a help to the new settler."

Swan Nelson

"I took up a piece of land about 6 miles from Crandon. I have a nice piece cleared and about 4 acres of potatoes in, two acres of oats, and an acre of corn. Built a little house and barn for the horses and chicken coop. What more can be expected in one year when you are alone? But I am confident in the welfare it will come better some day, but without honesty and work a person will never make any headway. But there are other things which make a person lonesome when you are alone and have to do inside work just as well as outside. It is hard in the beginning without much means, but wherever there is a will there is always a way, so I thank you very much for your kindness."

D. M. Morris

"We have been on our farm in Clark county for over a year. We like it here, but as you know it has been a bad year financially the world over. My wife says to tell you we are here and it would take a stump puller to get us out. We have a nice laying quarter section with about 25 acres under plow. Have cleaned up about 10 acres since we came. Expect to build a barn next year."

A good flock of poultry is the settler's best friend.

Fred Shultz

"I am near Bruce and am getting along as fine as I can expect it. I have about 7 acres of oats, 1 of corn, 2 of potatoes, garden, 150 full-blooded white leghorn chickens, 2 cows, 4 heifers, 2 sows, 10 pigs, 20 geese, 15 ducks, 2 horses. Pulled out many stumps and will pull out some more, and will have the farm surveyed in the fall.

B. F. Segner

"My new address is St. Croix Falls, Wisconsin, R. R. 2. Have been here since May. Located at Deer Lake 5 miles east of St. Croix Falls. Getting along all right."

Wayne Call

"Thank you for your interest. I met a man who owned an unimproved farm here in Marinette county and he made me an offer and brought me to see the farm, 160 acres. He leased me the farm for five years and I get all I raise off of what I clear and he furnished material to build a 4-room house, so I am here. Haven't any money to speak of, but expect to work my way through and come out on top."

G. A. Schulze

"I bought 120 acres at Gilman and located. We managed to get enough cleared last spring to get a few acres into oats and about two acres in corn, which was good, besides garden stuff and potatoes. In about a week I will have ten acres of land in shape for spring seeding. What we are lacking in this part of Wisconsin is good farmers. We have the land to raise the crops."

John Otta

"I located 4 miles from Sheldon, and am putting up a house. Send me soil map of Rusk and Chippewa counties, for I want to get some more settlers here."

A. L. Perschbacher

"I am on cut-over land near Medford trying to establish a farm. Send me any and all news which will be of importance in clearing and cultivating land."

John H. O'Rourke

"I have been unable as yet to locate in Wisconsin, but have been instrumental in having four families move into your state and they seem to be well pleased."

R. A. Hedges

"While at Rockford I received many interesting letters from you, and wish to state that they were appreciated, and the contents of same have undoubtedly been the cause of my taking a course in horticulture at the Milwaukee School of Agriculture."

Leo Chas. Bethke

"I have located at Hannibal and built a log house and a log barn, dug a well and have brushed about 4 acres and stumped three-fourths acre since May 20, and also fenced about 16 acres for pasture and put up 5 tons of hay."

James A. Patek

"I bought in Clark county about 12 miles southwest of Neillsville. Mr. Knipfel, the county agent, was out here with me to look this place over. He thinks it is all right. There is about 20 tons of hay on the place and around 4 tons of oats hay."

George F. Slater

"Evidently you had forgotten our having moved to Wisconsin. Our produce was entered in both the Merrill and Tomahawk fairs with creditable showing. I dug a potato Saturday that weighed one and three-fourths pounds, and sent it to our local (Merrill) paper."

Edwards Feeve

"This is our third summer on our land, 8 miles west of Barronett. We have cleared 20 acres."

John Erickson

"I own land in Douglas county near Cloverton in the great clover belt of Wisconsin. This is good land and I appreciate the opportunities for the settler of small means."

Arthur Stielow

"I located about 4 miles east of Sheldon. Tell me more about the soil of this neighborhood and how to handle it."

Alex Remkus

"I received information from you while living near Rockford, Illinois. Please address me now at Gleason."

The Wisconsin Land Mortgage Association law has put $547,420 to work in the cut-over country, making brushing, stumping and breaking loans available to settlers on the 30 year amortization payment plan.

Philip H. Meinzer

"Am in Wisconsin near Danbury. Left Glasgow, Montana, and bought 80 acres. Am going to expect help from you, seeing you were so anxious to get me here. Please send me pamphlet on soy beans and anything else you think may be of interest to me."

M. E. Garlock

"I came to Wisconsin about five months ago and intend to start a stock and dairy farm. I now have out my crops. Any information you could give would be appreciated. I believe I can make good in this state. From now on address me, Prentice, Wisconsin, instead of Bloomington, Illinois."

Walter Stubbs

"Some time ago I read an article stating that for ten cents the Department of Agriculture would send plans for a two-room house. I have purchased 40 acres in Forest county and intend to build a small house on it. I am enclosing 10 cents. If these plans and cost of material are available please send them."

Andrew Peterson

"I have bought 134 acres 5 miles south of Stone Lake and have built a house and other buildings and will live here till late in the fall of every summer. Would appreciate any advice the state can send; in fact, I would like to keep in touch with all up-to-date methods."

Alan Fletcher

"I have purchased 40 acres at Brantwood and am now clearing it. I have written to you before and got a lot of helpful information. Have heard that goats are good for clearing land and at the same time give milk and do not need much feed in winter. What about it?"

A. W. Toft

"Your letters help. From time to time, as I received them, I turned them over to a friend of mine, also a Wisconsin boy. He is now back on the farm and seems satisfied."

E. L. Jay

"I purchased a farm three miles from Ladysmith and am wondering if you can put me in touch with some reliable breeders of Guernseys in that vicinity or elsewhere in the state."

E. R. Bailey

"About a year ago I answered your advertisement in Chicago papers. Have bought government lot No. 4, Section 33, Township 40, Range 4, Vilas county, and am trying to get lot No. 3, same township. What information can you furnish me on clearing land? This piece has a lot of small poplar and birch on it and last spring the fire run through it, so most of it is dead. I want to make a summer place of it and also clear it up for farm use. They tell me I can plant Siberian crab-apple trees and get some results. What information on fruit trees?"

Frank Washa

"I moved up here on my land near Radisson, have built a shack to live in, put up nearly nine tons of hay, did some fencing, dug a well 38 feet deep, have a pump on it and good water. I am now walling up a cellar on which I intend to move my shack. Have a team of horses, one cow, 9 chickens and one sow with five small pigs. I have cleared 15 acres, of which about 5 acres is plowed and the remainder mostly seeded with clover and timothy."

Wild berries, game, bees, home grown meat and dairy products reduce the cash outlay for the settler's groceries.

J. N. Riffle
"We intend to move to Clark county two miles from Greenwood about October 15th. If you have any bulletins on horticulture, both large and small fruit, also bees, I would be very thankful to you if you would send me the same, or what you think I would need to start with; also a list of bulletins."

H. E. Jewett
"I am in Milwaukee earning good wages, but I bought 80 acres in the northern part of the state. Hope to start next spring. Bought in Oconto county. I am well supplied with pamphlets from the agricultural department and appreciate the information sent me."

Jr. Harder
"I have just settled in Langlade county and would thank you for any information you see fit to send me that would help me in clearing land and getting started."

W. A. Basom
"Bought near Breed, Wisconsin, Oconto county. The soil is light sandy loam. Any information concerning clover seed and the time to seed will be appreciated, as clover and potatoes will be my first object. Will be at Breed by March first."

L. A. Harriman
"You will see by this that I came here to my land near Marek. Am satisfied with the outlook and like the country. Would like to get in touch with the Wisconsin Potato Growers' Association and best farm papers for this section. Please send me department mailing list."

E. E. Edwards
"We are located near Owen. Thanks for interest you have in our welfare and any further information that you may give me would be appreciated."

C. J. Bessa
"After several months' delay I am glad to inform you, Mr. Packer, that I have at last settled with ———— on that land deal up at Minocqua, and I have now 140 acres of cut-over land with a small house and barn and with about six acres of clearing. Now, I would like to know if I could get a cheaper rate from the railroad company for settlers. I move this fall if possible, so I can cut wood this winter."

Geo. E. Smith
"Will drop you a line to let you know how I succeeded on my new farm southeast of Spooner. That is the place where you dropped in on us and had lunch with us in the new house we were just building. I was up there a month and got some land ready for the plow and seeded it down to timothy and alsike clover. I am back in Chicago working for the team, cow and chickens now as I did for the place. Our land is paid for."

J. B. Detterer
"I intend to move to Colby. Would you advise me to buy horses here in Iowa and perhaps some cows and take them along, as I think they are cheaper here than in Wisconsin."

A. F. Burke
"I recently bought in your state and received valuable assistance from your department in the way of soil maps and reports. Until I started looking in your state I did not realize how thoroughly you are covering the problem of showing to the homeseeker the advantages to be found in Wisconsin."

George Krueger
"I wish to thank you for help given, also for literature sent in the past. I know for a fact that I am the cause of at least four parties settling in Wisconsin, one at Stanley and two at Jump River. I had

110 acres at Birchwood and sold 80. Still have 30 acres on Chetac Lake and a 3-acre lot on Long Lake, Washburn county."

K. Schoeneman

"We have bought near Mountain. Please put this letter in the hands of someone in the department for a cookbook with recipes for canning vegetables and fruits."

Thos. Farley

"I am planning on shipping out of Killdeer, N. D., about August 15th to Drummond, Wisconsin. Any pointers you could give me as to the best route to ship over and information on rates would be appreciated."

"Some day I'm going to have a farm
With cozy cottage and little barn,
With pigs, chickens and a cow or two,
With just enough work that one can do.
Where water's pure and the air is free,
Where wild flowers grow, the wild bird sings,
Where hope eternal in the bosom springs."

Chas. S. Wadsworth

"Have bought near Bayfield. Am clearing some at present. Land is less than half mile from shore. Only objection is some stone, but do not think there will be enough to bother much. Have you any information on varieties of small fruit and apples, cherries, etc., adapted to this section?"

S. B. Boston

"I intend to make my home in your state on 80 acres in Burnett county that I bought last fall. If you can furnish me any information of that immediate neighborhood I would appreciate it."

John R. Kolar

"I am located now near Florence in your state. Thanks for your kindly advices. I would like to go and get some more settlers up in this county. We have excellent soil and grow everything, but our county has never been boosted yet. More settlers the better for us."

A. F. Burke

"I bought in Langlade county, your state, about a mile from the town of Summit Lake. Wish to thank the department for the interest you displayed in me while I was looking up the prospects in your state. Expect to start operations in the spring. Another party bought an 80 cornering mine to the north, so I will not be entirely among strangers."

Gus Strom

"We bought 120 acres in Polk county. My brother and father have been working it this summer and the last trip up there we were all pleased with what they had accomplished. We are a little far from the railroad, but will "Grow up with the country."

Otto Timmermann

"Have been here near Medford about 2 months and think we found a good place of 80 acres, about 30 cleared, the rest is in good timber. I like to know if I could feed potatoes, crushed oats and whey to hogs and small pigs?"

C. L. Hess

"We certainly appreciate your help and interest as we now have bought in Bayfield county and expect to go on it next spring. Would you be so kind as to give us some idea of the amount of cash we dare try to start up there with after the land is paid for. Two in family, wife and self. This is our important question."

Wesley H. Hale

"We now have 120 acres, half cleared and broke and half second growth timber near Wisconsin Rapids. If you have any literature on clearing and breaking we could use it nicely."

Iver A. Sorenson

"I have located near Harper Lake in Rib Lake township of Taylor county. I wish a book on preserving meat, raising better dairy calves and selecting seed corn."

N. F. Spurgin

"We located near Stetsonville the first of January and are pleased with our new home and our new neighbors. I have gotten something out of the change I wasn't looking for and that is my health. Our gravel roads beat Illinois mud."

Carl A. Nordstrom

"Weed commissioner has cut some Canada thistles adjoining my property. He did not notify me personally or by card. I have cut these thistles for two years. When I came to cut them now they had already been cut. Can he lawfully make me pay for his time, etc., in this case?"

S. A. Cherry

"We purchased west of Prentice. We like the land for all it will require some real work to get it in shape for farming. As we are not of the moneyed class we must go slow and learn to peddle."

E. F. Ellmaker

"I bought eighty acres in Marinette county and expect to clear a good part of it this spring. I made several trips up there and think the country is all right. Have induced several of my friends to buy there as well."

C. W. DeVoe

"We bought a farm of 130 acres near Argyle, Lafayette county. There is on this farm about 45 acres of bottom land which can be drained. Who can tell me how to go at it?"

A. P. Risser

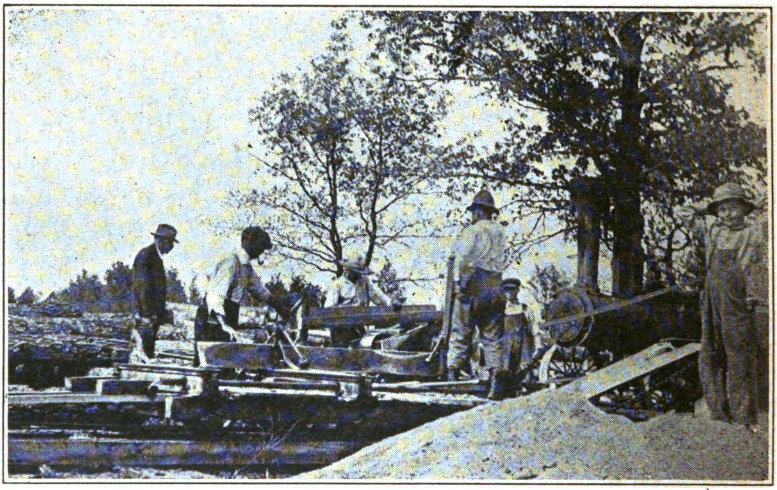
"Am anxious to get your opinion on an engine driven saw for the man who wants to clear his own ground. Are they practical, both from the standpoint of cost and the standpoint of work they will do?"

D. S. Mavity

"We bought near Merrill and are now hauling lumber to build a house. I know that things will grow here, for we had a fine garden. Had green peas from June 1 to September 30, and the other stuff I planted did well. I started in as a one-horse farmer, but now have two."

Elmer Williams

"Farmers out here are in the habit of leaving their cattle wild and if you don't fence your land you cannot grow anything, for they will destroy everything for you. As I understand that there is a law in this state against such, I would like to know whether this can be stopped without making enemies with my neighbors. And another thing about poisoning potatoes, do you have to have them fenced?"



Most cut-over land will furnish short logs, windfall trees, and second growth saplings which supply dimension timber and rough lumber. Neighborhood co-operation and the portable saw mill cut down cash outlay for manufacture.

R. W. Cooper

"I have purchased eighty acres near Cable and will undoubtedly add the adjoining eighty acres to my purchase this summer. We are especially interested in cattle and root crops. Would also like some information regarding buildings best suited to this district."

Paul O. Camerer

"I have just received your comparisons of crops and having just started in on 80 acres of raw timberland 2 miles south of Hannibal, this report looks very good, as I notice that Wisconsin is ahead of my native state (Illinois) in the production of several crops. I thank you for any information that you might send to me at any time, as it is all new to us here and we sure would like to make a go of it and not lose a lot of time and labor that we might avoid if we had a few outside hints from outsiders who have made a study of the needs of a new settler as you people have."

G. E. Melick

"Would like the best roads to ship over from Liscomb, Iowa, to Hersey, Wisconsin, as I expect to load an emigrant car November 1.

I understand emigrants have trouble getting out of St. Paul unless car is loaded just so. Had we better stand horses lengthways or endways? And how much grain and hay can be put in? And how much space must the horses have? Please give all needed information at once, so I can have it before starting."

S. Weyrick

"Yes, I took a trip back to Wisconsin from the state of Washington in August and part of September and found the country I went through better than I really imagined, as the crops and dairying were fine, and I bought 40 acres for myself and 40 acres for my son and think I can locate some more. I bought in Rusk county."

Policy of the Immigration Division

The value of land is what a farmer gets out of it over and above what he puts into it. We find too many fighting for bare existence on land that never should have been sold for farming where the net result has been sorrow, loss of hope and even worse.

Land has an economic and social value, a fact that should not be lost sight of in any system of settlement. This mean that types of land not farmed at a profit should be devoted to some use other than agriculture and we should hasten the day when that may be brought about.

This branch of the state government attempts to conduct its work in such a manner as to best serve the interests of the settler who considers coming to Wisconsin to put in his labor and that of his family to develop a farm. In offering this help we do so in the belief that the ultimate object of owning land and farming is not merely to make a living, nor to speculate on the advance of land, but to rear a family in the hope that they may follow useful occupations and make their neighborhood a better place in which to live.

Wisconsin has all sorts of land, most of it good. The majority of homeseekers in touch with this division are headed toward localities where the soil produces fairly well. It is our experience that agricultural land is the kind found where farmers have developed prosperous communities; that non-agricultural land is that where farmers have tried to do so and failed.

The state cannot afford to hide facts from the homeseeker. It is not doing so. This brings up all sorts of novel situations better illustrated before a committee than in a report limited by statute. Lands of low and too uncertain production are being offered on the market in the form of trades. These tracts, big and little, partly improved and wild, are owned by speculators scattered from Seattle to Key West. The owners naturally are all the time trying to get out from under. Would-be settlers send us glowing descriptions and ask how about it.

It has been said of Wisconsin that no other state gives so much personal service to the intending settler. No state makes the problems which are so all-important to the land seeker, a personal concern. This division through the State Department of Agriculture puts him in touch with all the various cooperating branches of agricultural service in the state.

It is difficult to estimate the value of a new settler who comes into the state and purchases land for the development of a home and the means of a livelihood. It has been estimated by governmental authority that on the average such a settler is an asset that is worth at least a thousand dollars to the state. Not only does he purchase and pay for the land which he owns, but, what is of more significance, he starts a home and spends a large portion of his energy in redeeming what is now unusued and unoccupied land, making it a source of productive income to himself and family. In this capacity he becomes a revenue producer and his returns are spent in large measure for the sustenance of himself and family.

Community co-operation in purchasing explosives cuts the handling charge between manufacturer and user. 6,350,000 pounds of explosives were distributed in the upper Wisconsin counties the past two seasons.

Likewise as a taxpayer he bears his share of the cost of government and so the state receives a direct benefit from the taxes which he pays, as well as an indirect benefit which comes from the expenditure of his earnings for the support of his family. The man who has hewed out a home for himself in the cut-over woods of the North, or has broken and put under cultivation a farm, may well be said to have done his duty to posterity and deserves to be well treated by the state.

Definite amounts of the state appropriation are set aside for the purpose of administration, classified advertising, publications, exhibits and lectures.

Information sought by those who are looking for farm homes in the new parts of the state includes many subjects, and one provision of the act creating the department provides for the furnishing of data from all state-supported public bodies when requested by this division. It is impossible in any single publication fully to set forth the matters inquired about, for those in communication with us, as will be seen from the foregoing, are usually interested in certain soil types, their development and nearness of creameries and schools, local matters, etc. Specific subjects are fully covered by personal correspondence. Thirty-five per cent of those who write the department come back at some later time for further information.

In its administration the efforts of this division may be outlined as follows:

1. To secure the attention of those looking for homes;
2. To arouse an interest in the state;
3. Outlining to intending settlers methods of opening lands;
4. Actual settlement.

It is true, of course, that all commonwealths are competitive, in matters relating to settlement, so it is necessary to understand what is being done along publicity lines in other regions in order to handle the work efficiently. This is now quite well understood. A rather interesting feature of publicity work in some states is the fact that the manner in which those states handle inquiries has been of direct benefit in promoting immigration toward Wisconsin, through the publication of such inquiries. The most promising fields are in Indiana, north of Indianapolis; in Illinois, north of Pana; in Iowa, east of Des Moines, and in southern Minnesota, south and southwest of Le Sueur.

Service to Homeseekers

If it were possible to incorporate into a report limited in length by statute, a digest of what the great body of homeseekers in touch with us wish to know, and what we are doing to help them, this would be no dry, dusty document, but one brimful of human interest. No department of state deals with matters more closely related to home life. When the inquirer's attention is once obtained and he is assurred that the division is impartial and not financially interested in

The result of locating where the soil produces well.

the sale of land, he proceeds to unfold in detail his present intentions and plans for further activity, hoping in so doing he may be saved from misdirected effort. Encouraged to believe that his welfare is the chief consideration of the department, and his making good at farm development a greater item than mere purchase of lands or removal from another state to Wisconsin—and such is the manner in which this work always has been conducted—a close personal relationship follows and he comes back with a three and four-page inquiry to learn more about every phase of the situation.

Classified advertising can be made to cover any section, any state, or the entire country, and do it thoroughly. Direct, traceable returns are secured from this source. During the last biennium the following card has been inserted in the classified columns of a limited number of farm journals, metropolitan dailies and the country newspapers:

"Free Wisconsin Bulletins—Soil, Climate, Crops—Immigration Bureau, Wisconsin Dept. of Agriculture, Madison, Wis."

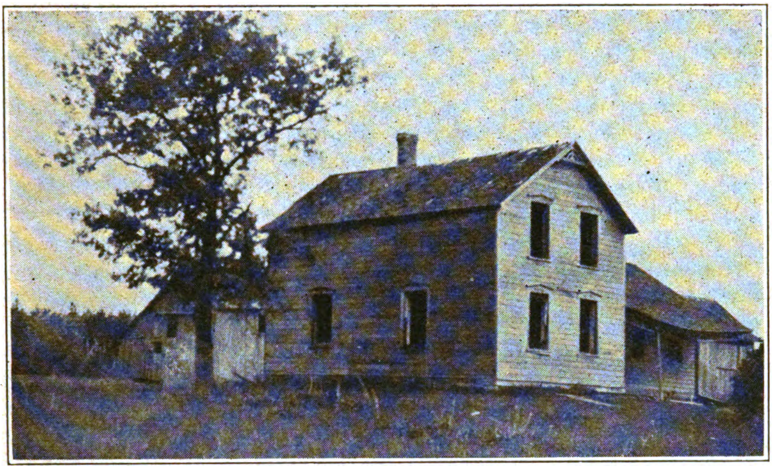
A careful check is kept upon such notices and each is keyed in such a way as to indicate the paper giving results. The journals used have been those whose circulation is principally in the sections above named and this system has developed into an effective medium of securing the attention of homeseekers. The possibilities of such work are limited only by the number of papers that circulate. More of them should be made use of. It is a most modern way of reaching prospective homeseekers and one that has been given almost unlimited use by the Canadian government. Its use by this division has proved itself efficient, rapid and valuable, for it has enabled us to secure immediate attention and get prompt returns.

Furnishing Impartial Information

To continue the interest of those responding to such classified notices a comprehensive system of follow-up is employed in the form of personal communications, as hereinafter discussed.

No proper presentation of Wisconsin's offering to the homeseeker can effectively be made without appreciating agricultural surroundings in sections whence the homeseeker is writing. To assemble such information and to use it with profit has meant an analysis of federal reports describing agricultural conditions in every county of every state in the Union. This comprises the production of all crops per acre, the percentage of farm tenancy, increase or decrease in farms or improved land, and in farm property values including live stock, farm buildings, and the average worth of crops per acre. Inquiries determine values to a great extent by comparison and the department is constantly furnishing these statistics of crop production in Wisconsin counties and others throughout the United States.

We have tried to avoid appealing to the imagination of homeseekers by refraining from publishing rosy stories showing unusual successes of Wisconsin farmers. While there are plenty of such illustrations showing what has been done in a single season, their widespread pub-



The result of locating where the soil produces poor crops.

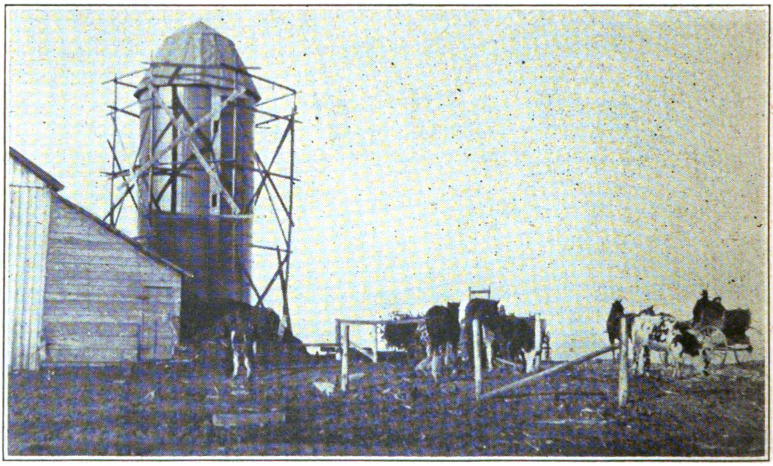
lication is unsafe even on the theory "what one man has done another can accomplish," because so far as obtaining results in the field are concerned, it has not yet been established that all men are equally competent. It is much safer to use averages and such comparisons are valuable: First, because they are impartial reports of the federal government; second, they are averages; third, they are as complete as can be expected; fourth, they convince. To illustrate: In response to an inquiry received from one residing in Illinois asking about a particular Wisconsin county, a personal letter is prepared showing the yield per acre of cereal crops, hay and forage, and potatoes in the county where the prospect resides. A similar table is also presented showing the production of crops and their acreage, the rainfall and its distribution and the length of growing season, a short description of soil, number of rural free delivery routes; newspapers, telephone lines, public and private schools, and especially such recent seasonable data as are available. Every effort is made to persuade the inquirer that the department takes a definite interest in his undertaking.

In addition to a personal letter the inquirer writing the department receives a soil survey of the area in which he is interested if one is published—with the statement that such is only a general survey—a bulletin devoted to climate, map, and additional publications discussing problems of interest to him.

The first letters received from homeseekers are less difficult to handle than their subsequent inquiries, yet those principles applicable to all business enterprises are applicable to the work of this department, and no successful commercial organization today would delay in following up the first response from advertising. It simply must do so to live. A single communication from this state, however complete, will not bring the traceable results desired, and it cannot be emphasized too strongly that there must be a further presentation to increase the interest expressed, to create a desire to locate, and to actually promote location. Hence, each inquirer receives five letters from this department whether he replies or not, and also six additional communications prepared and sent out by our department in cooperation with the State Experiment Station, State Board of Health, Library Commission, Live Stock Breeders' Association and the State Horticultural Society.

Cooperation With Experiment Stations

The branch experiment stations throughout the state are fully informed about profitable methods of crop production and possess information of great value to those contemplating immigrating to this state. The period covering the opening up and development of the first ten acres is the most crucial in our new settler's entire experience. To Professor E. J. Delwiche, superintendent in charge of the Branch Experiment Station work, and to county agricultural representatives belongs much credit for assisting those who locate and others who intend to do so, in outlining methods of opening up new land to secure as early a return as possible. To each homeseeker the department sends a personal letter calling attention to the assistance rendered by these branch experiment stations, and every opportunity is afforded to become acquainted with the latest and best being accomplished in land cultivation throughout the state. It is admittedly impossible for us to pass on matters relating to farm practice, but such problems are inseparably interwoven with immigration. The state through its college of agriculture, however, possesses this information, and it is our duty to see that the homeseeker receives it at once.



Getting ready for a good addition to the supply of winter cow feed.

Those in touch with the department are thus made to feel that the state takes a personal interest in their making good. No other state immigration department cooperates in this manner with experiment stations. To digress right here for just a moment, the Canadian government has transferred its immigration activities from the older sections of Wisconsin to the new portions. Their representative travels from town to town, placing bulletins in the settler's wagon while he is buying supplies for the house, and by other methods is urging him to cease his efforts at development in this state and trek to the Canadian frontier. The following from a recent report of the Canadian government agent for Wisconsin to the Canadian Superintendent of Immigration at Ottawa is suggestive:

"The people from the northern part of Wisconsin will make first-class settlers for Canada, being energetic, resourceful and capable and having sufficient outfit and money to make a good start."

There is much good country still to be opened and we mention the work of the Canadian government at this point merely to show how advantageous it is that new settlers become acquainted with methods of development that will permit a rapid expansion of the farm.

The Land Mortgage Association

The plan of the land mortgage association provides for long time amortized payments on the land. Under its provisions the settler may repay the loan on his land by installments of such frequency and amounts as may be agreed upon provided that not less than one per cent of the original amount of the mortgage is paid upon the principal annually, commencing not later than the sixth year succeeding the year in which a loan was made. Larger installments upon the principal can be paid as the settler develops his place and upon 60 days' notice he may wipe the slate if he wishes to do so. In a limited way this system also meets the demand for small development loans at the start. The experiences of a number of northern settlers are given in illustration.

July 22, 1921, W. G. Aberle obtained a loan of $300.00 which enabled him to stump and plow ten acres, furnish the necessary materials for a 12-foot silo foundation and also the necessary purchased material for a basement under his house. An additional loan of $97.50 May 25, 1922, furnished the necessary roofing, windows, cement and hardware for a barn 26x36.

A loan of $37.52 made July 25, 1921, to J. P. Anderson enabled him to stump and plow three additional acres.

Sivert Bergstad July 15, 1921, obtained a loan of $304.60, making it possible for him to stump and plow ten additional acres, put siding on his little house, paint it, and build another chimney.

As the result of a loan of $200.00 July 12, 1921, to Eli Buggie he stumped and plowed ten acres more, built a 12x14 addition to his barn.

On July 13, 1921, W. J. Butterfield obtained a loan of $265.00 with which he brushed, logged, stumped and plowed an additional ten acres.

A. D. Crews December 8, 1921, obtained a loan of $317.42 with which he was able to buy a team, cow, and build a 10x20 addition to his house.

A loan of $59.16 to Knute Dagestad, August 5, 1921, resulted in his being able to stump and plow three acres more.

Fifty-three dollars of a $210.00 loan to L. M. Decker, September 2, 1921, was used in the purchase of sash, doors, roofing and other building material and with the balance he was able to brush and log three more acres and stump and plow eight acres.

Leon Druwe, July 14, 1921, obtained a loan of $293.69, of which he used $96.00 in the purchase of windows, roofing and hardware for a barn 26x30, $20.00 for paint, $100.00 on the purchase price of a team and the balance was used in brushing three acres, logging eight, stumping and plowing two acres in addition to that already under cultivation.

Fifty dollars of a $276.00 loan to O. R. Ellis, July 18, 1921, was used in buying the necessary purchased materials for a hay shed 20x36; $60.00 of the loan was used for house improvements, new roof, small porch and painting, and $122.00 of this made it possible to stump and plow eight additional acres. On May 11, 1922, he obtained an additional loan of $166.34 with which he was able to stump and plow seven acres more.

Upper Wisconsin already has as many dairy cattle for an acre of improved land and is growing rapidly.

August 3, 1921, Harry Hummer obtained a loan of $122.00, enabling him to stump and plow five acres.

Frank A. Hartz, July 26, 1921, received a loan of $140.00, making it possible for him to stump ten and to plow five acres.

Henry Inholt was able to log, stump and plow eight acres because of a loan of $209.50 obtained July 26, 1921, and a similar loan on the same date to his brother, Louis, made it possible to stump nine acres of land.

Because of a loan of $162.07 to Bruno Jermakowicz, December 10, 1921, he has been able to buy the necessary purchased materials for a small barn.

With a loan of $127.50, July 28, 1921, John H. Johnson was able to stump and plow eight additional acres and one of $123.05 on the same date enabled Walter Johnson to brush, log and plow six more acres.

John Langsma obtained a loan of $325.88 July 13, 1921, with which he built an addition of 12x20 to his house, an addition 12x12 to a small barn, brushed 13 additional acres, logged 13, stumped 4, and plowed 4, and later, May 11, 1922, with an additional loan of $243.60, brushed and logged 8 acres and stumped and plowed 10 more.

On July 14, 1921, Henry T. Junk received a loan of $235.00, making it possible to brush and log 8 acres, to stump and plow 6 acres, to buy 160 rods of woven wire fence, to build a small porch on his house, and buy the necessary purchased material, roofing, windows, etc., for a machine shed 10x30.

Martin Fast was able to stump and plow 20 acres that had been seeded to clover, bought the necessary doors, windows, roofing, etc., for a small house as the result of a loan of $429.00 July 15, 1921.

Because of a loan of $145.02 June 6, 1922, A. M. Grieve was able to brush and log 10 acres and to stump 6.

Luther Gowin received a loan of $187.80 October 24, 1921, brushed and logged 7 acres, stumped and plowed 8.

On July 16, 1921, John Gray obtained a loan of $92.88 and as a result was able to brush and log 8 acres and to stump 4.

Hugh Graham obtained a loan of $315.50 July 16, 1921. He stumped and plowed 12 acres and was able to buy the necessary purchased material for a barn 16x20.

On April 8, 1922, Felix Harazowich obtained a loan of $122.26, brushing and logging 10 acres and stumping and plowing 5.

A loan of $314.25 October 18, 1921, to J. L. Hibbs made possible the brushing and logging of 8 acres and the stumping and plowing of 14.

As the result of a loan of $40.49 to John Hanson August 7, 1921, he stumped and plowed 4 acres.

Adolph Jarosz, July 16, 1921, received a loan of $89.27, with which he brushed 3 acres, stumped and plowed 5.

Chester and Ignatz Korenski, May 9, 1922, received a loan of $237.00, enabling them to buy the necessary purchased materials, roofing, windows, nails, etc., for a small barn 26x38 and also made it possible to brush and log 10 acres and to stump and plow 5.

On July 16, 1921, Adam Kraft received a loan of $283.92, making it possible for him to brush and log 15 acres, stump and plow 10 and to buy the necessary purchased material for a henhouse and root cellar.

Exhibits at Fairs and Expositions

One of the outstanding features of Canada's land settlement program consists of exhibits of farm products at fairs and expositions in the United States. She gets out and shows her goods. Likewise, also, does Wisconsin and, when possible, places displays alongside those of Canada. Fourteen of these exhibits have been made during the biennium covered by this report:

Name of Fair	Held at	Attendance
Lee County Fair	Amboy, Ill.	28,000
Iroquois County Fair	Watseka, Ill.	37,000
Indiana and Illinois Fair	Danville, Ill.	57,000
Indiana State Fair	Indianapolis, Ind.	300,000
Tippecanoe County Fair	La Fayette, Ind.	30,000
Cass County Fair	Logansport, Ind.	40,000
Monee District Fair	Monee, Ill.	20,000
Peoria District Fair and Swine Show	Peoria, Ill.	
Illinois State Fair	Springfield, Ill.	70,000
Mid-West Horticultural Exposition	Council Bluffs, Ia.	
International Live Stock Exposition	Chicago, Ill.	
Potato Show	Milwaukee, Wis.	
Wisconsin Products Exposition	Milwaukee, Wis.	
Wisconsin State Fair	West Allis, Wis.	

At the Mid-West Horticultural Exposition, November, 1922, Wisconsin won firsts on potatoes and sweepstakes silver cup for best exhibits of garden products.

In writing of exhibits in previous reports we have been content with the bare assertion that corn-belt farmers are not acquainted with agricultural affairs in Wisconsin. This year it was decided to note down some of their statements. A few will suffice to illustrate:

"How can you raise such stuff on any soil which is not black?"
Frank Stufoki, Star City, Indiana.
John F. Portmeyer, Logansport, Indiana.

"Your roads are fine in summer, I am told. But in winter they must be impassable, because of the cold and snow."
John Mandlen, Rochester, Ind.

"Potatoes is about the only crop you can rely on. Even dairying is on too small a scale individually to be worth while on account of the long feeding season."
H. McDonald, Logansport.
Samuel Baker, Rochester, R. No. 9.

"Is your soil black? Answer: 'No.' Then it can't be good for anything."
T. Poppes, Monee, Ill.
E. Phillips, Monee, Ill.

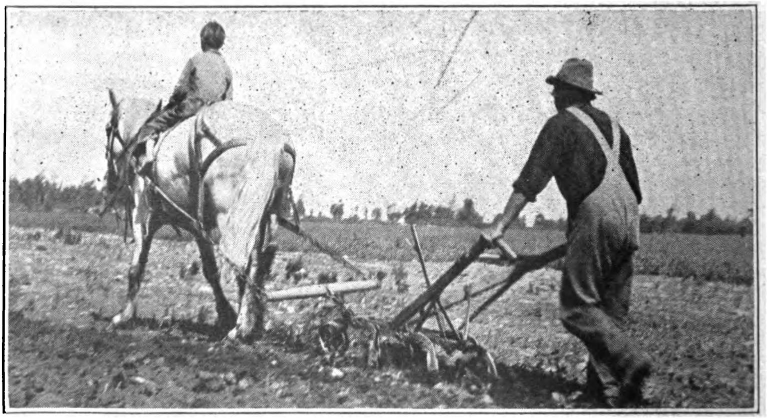
"I hear your roads are all sand—not passable in summer, because they are too dry, nor in winter because of the snow."
W. H. Sass, Monee, Ill.

"It must be too cold to raise beef."
H. B. Jansen, Monee.

"You are so far north that it must be too cold for gardens."
Jas. Craig, Peotone, Ill.

"This is a fine exhibit; that is, if the stuff was really grown there." Was shown express receipt. "Yes, that shows that the stuff was shipped from Wisconsin, but it does not show that it was grown there."
Frank Heyden, Crete, Ill.

"I am told that it is so cold in Wisconsin that trees freeze so brittle that you can break them in two."
John Means, Monee, Ill.



Cultivating rutabagas—the first time over.

"Isn't it a fact that most farmers lose a large number of cattle each winter by freezing?"

H. D. Stickrof, R. 3, Lokansport, Ind.

Ever since the days of biblical history when spies returned from the promised land with exhibits of fruits of the vine, displays of farm crops have been effective in securing settlement. The Canadian northwest has been built up largely because of the activity of western provinces in coming into this country and showing their products.

Exhibits bring results. A single instance will suffice: D. J. Summerville, an Iowa farmer, first became interested in Wisconsin through an exhibit put on by this division at Des Moines. He is now developing 160 acres 6 miles south of Ladysmith, located in 1915, has put 50 acres under the plow, brushed off and put into pasture 45 acres, built a house 16x26, barn 32x52, working into Holsteins and preparing to rebuild his barn and erect a silo. Incidentally, he has been active in stimulating others to take up farm land near him.

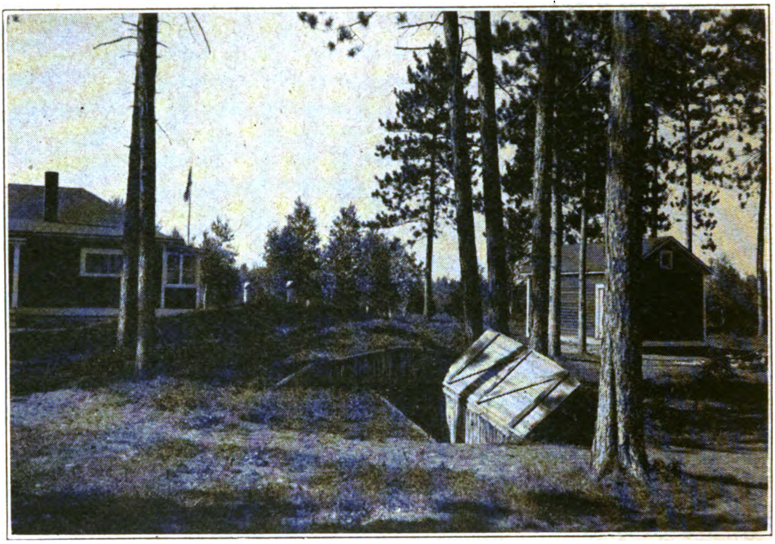
Many people leave their addresses for information at exhibits. These are put through a course of follow-up to create further interest and encourage settlement.

Personal Interviews

For the purpose of finding out the capital which the intending settler has available, the locality in which he is interested, his farming experience, and to find out what concerns he is dealing with, the immigration division has for the past eight years cooperated with the U. S. Department of Labor and the Illinois Free Employment Bureau of Chicago by meeting prospective settlers before they have purchased, at a desk provided by the employment office. At these interviews a representative of the division discusses with the prospect soils, climate, methods of development and farming prospects in the various localities where land is offered, and warns him against professional traders who are constantly attempting to trade poor, lean, non-agricultural land for equity in city properties. Every homeseeker who is in touch with the immigration division receives an invitation to confer personally with the division's representative. Interviews during the past biennium were held at the following places, the representative meeting from ninety to one hundred and twenty per week: Chicago; Minneapolis; St. Paul; Galesburg, Monmouth, Decatur, Rock Island and Peoria, Illinois, and Ft. Wayne, Indiana.

Market for Settler's Wood and Labor

Letters from settlers throughout every section of the cut-over country indicate that the market for wood products which slumped to a low ebb following the war has reached normal. Cordwood, green and dry, paper bolts, poplar bolts for excelsior, ash and basswood bolts for furniture, ties, mine props, and even kilnwood is in brisk demand, with prices quoted which return a good wage for settler and team while engaged in removing timber from his holdings. Such employment enables the settler to remain at home and care for his live stock during the winter months.



On most new upper Wisconsin farms root houses are used for storing vegetables.

A similar revival in the demand for woodsmen is reported. Employment agencies in Chicago, Minneapolis, St. Paul and Duluth have been unable to fill orders for laborers wanted in camps at points throughout the cut-over territory. Wages range from $40.00 upward with complete maintenance. Such employment permits settlers without live stock and those with no wood products to sell, to profitably employ the winter months when little can be done in the way of land clearing.

The Immigration Division Investigated

Liberty is taken here to insert the condensed statement by Mr. P. S. Lovejoy, a national investigator of land affairs, quoting from his article, "The Wisconsin Idea in the Cut-Overs," appearing in the Country Gentleman magazine January 1st:

"Wisconsin is getting ten good settlers in its cut-over country to our one, said the secretary of a Michigan development bureau disconsolately.

"Why?" I asked, rather surprised at the admission.

"She goes out after 'em, that's why," answered the secretary. "Goes out after 'em, spends money, advertises, stays on the job."

"Treat 'em right when she gets 'em?" I asked.

"Guess so. And we have just as good land, and it's cheaper and everything," went on the secretary.

"Show me," I said. He did. Anyway, he showed me millions of acres of good soil, well located, providing good crops wherever given a fair chance, reasonably easy to clear, averaging cheaper in price than in neighboring states, with some settlements coming in, to be sure, but nowhere near enough of them. We saw that kind of land—and a lot of other kinds of land. There were settlements on both kinds, but not very many old settlements on the lean sands, though one could see where new ones were coming in to try it again, and where the old ones had been. "Fall-downs," the secretary called the deserted places.

At the end of the trip we were talking things over.

A State's Bad Name

"What's the trouble in here?" I asked. "I've seen good land and indifferent and poor and miserable land and some settlers on each. I've seen fine, prosperous farms coming up out of the brush and stumps and I've seen starvation farming where the poor devil hasn't a chance in the world. Open up. What's the trouble in here?"

"Land hogs and land sharks," the secretary told me, "and lack of adequate machinery to locate the settlers to the best advantage to keep them headed right; lack of credit sometimes—but mostly the continued peddling of land too poor to farm at a profit." He was doing all he could, said the secretary. But he didn't have any soil maps, he didn't have any real help from the state authorities, he didn't have money enough to advertise and reach prospects in time, the big landowners in his territory did not cooperate very well, and it was a slow game.

There was not so much really crooked real estate work going on as in the past, he said, and the new real estate agents' licensing law ought to help a lot with that, but things had been bad in the past, so bad that the state had got a bad name, he thought. Why, the assessed value and the sale value of good improved land in the older parts of the state was lower than in neighboring states! That was a reaction from the reputation growing out of the land-shark work, he thought. Now, over in Wisconsin they have . . . I heard a good deal of that talk in northern Michigan and, later, in Minnesota. It was evident that I should prospect Wisconsin ways. I did.

First the editor wrote the immigration offices of each of the three states, saying that many inquiries as to the cut-over regions were coming in and were often difficult to answer properly without much local information being available: that seemingly the state authorities should be the most competent and reliable agencies to advise prospective settlers, but that THE COUNTRY GENTLEMAN did not refer inquiries of this sort to anyone without the very fullest assurance that the inquiries would be properly attended to. Then he asked:

"Can you sell us the conviction that your organization or office is adequately equipped to do, and actually is doing, the work of matching up the man and his family and his pocketbook to the land and the chances to which the man and the family and the pocketbook are justly entitled?"

To this the commissioner of immigration for Michigan replied that inquiries of the sort mentioned should be sent to the development bureaus.

The immigration commissioner of Minnesota replied that he would be glad to send literature to such inquirers and to try to answer their questions, and that he would also have their names published in a list which was circulated among Minnesota real estate dealers and others at one dollar a year.

The director of immigration for Wisconsin replied:

"We have been forced to the conclusion that the transfer of title to land though it swing with it a commission to the broker and profit to the seller, does not mean development in any sense of that word; that discussing our problem of land clearing and protecting the incoming settlers from possible deception at the hands of dishonest land dealers or owners is a highly necessary function of all Great Lakes states inviting settlement.

"Homeseekers are skeptical and there is reason for their skepticism. Every inquiry we receive is treated according to these principles."

He offered to prove all that.

Before connecting up directly with the Madison office, just on general principles I drifted into the state on my own hook, asking questions, looking at land, going out on a "homeseekers'" excursion, sizing up the situation in advance. Then I made an appointment with the director, reported for duty and was taken out into the brush for a month, traveling the better part of two thousand miles through the Wisconsin cut-overs, branching off whenever and wherever I suggested, looking at good, medium and poor land, visiting old and new settlers, county agents, colonization projects, bankers, land men, lumbermen, editors—generally prying into the whole situation. Later, back at the capital, there was chance to visit with the people around the statehouse and out at the university and agricultural college.

We used to hear a good deal about the Wisconsin idea. Now I know something of what it is and how it works, and can very well understand how it might happen that Wisconsin could get ten settlers to her competitor's one. Perhaps Wisconsin is again demonstrating that it pays to be good. Perhaps she is collecting her pay for trying to be intelligent and decent with her cut-over country settlers. There is something at work in Wisconsin which is not at all in evidence in Michigan or Minnesota. The offices and officials concerned with the development of the Wisconsin cut-overs seem to have a different philosophy from the average. How Wisconsin happened to come by a philosophy when her sister states did not is something of a puzzle, but in any case there it is.

They pull together in Wisconsin—the state house crowd and the university and the agricultural college and the rest—to a very remarkable degree. Not perfectly, of course, but astonishingly well—to make Wisconsin a better place to live in. And not merely the old, settled parts of the state where the votes are, but the cut-overs as well. They do things in Wisconsin—to "discuss the problems of land clearing and to protect settlers against possible deception."

If you are an Illinois tenant looking for a better chance at your own farm, or an Iowa farmer looking for cheaper land or any of the fifteen-odd thousand others who see the little advertisement of the Wisconsin Department of Agriculture which the director of Immigration runs in eighty-one papers through the Central West, and if you write in for information and official assistance just what will happen to you? Will you be referred, as in Michigan, to something unofficial and of which you have never heard, and will you be passed along to a real estate concern? You will not. Will you get your name printed in a list which is circulated at a dollar a year among the unlicensed real estate dealers of the state as in Minnesota? You will not. You will get what I did when I wrote in on rough paper, using a lead pencil and even worse spelling than usual, and under different names and addresses.

The first thing that will happen will be a letter and a bulletin from the director of immigration. The letter will say that if you are thinking of settling in Wisconsin cut-overs you should know that there are right and wrong ways to go about it and to be very sure to read those sections of the bulletin dealing with Selecting the Settler's Farm and Settle According to Soil. Real soil maps of individual counties with plain and simple soil descriptions that any farmer could understand and use, will be sent free. Then comes some excellent general advice and a remarkable "P. S.," which reads:

"I inclose a certificate of inquiry to be presented by you to any person or firm from whom you may consider the purchase of land. It is for your protection. Make no payments without the seller furnishing an abstract of title or its equivalent. There are unlicensed traders in Chicago and other large cities whose activities, in my opinion, have been wicked, among them those operating near Mauston, Germantown, Nekoosa, New Lisbon, Necedah and southeast of Wisconsin Rapids in this state."

The certificate inclosed will have a big official "State of Wisconsin" at the top and will be signed and countersigned by the head of the State Department of Agriculture and by the Director of Immigration and will read, in part:

"The bearer is looking for a farm home in Wisconsin. It is our purpose to keep in touch with him and learn if he is fully satisfied with the business relations he may have with any person or firm selling land."

You will be due to get another one directly. This one will be on university letterhead and will be signed by the man in charge of land-clearing work for the agricultural engineering department. He will tell you that there are hard, slow and expensive ways to clear land and relatively easy and cheap ways; that he will be very glad to help any he can with advice and assistance concerning the use of explosives, stump-pulling devices, and such things.

Then you may expect another one, this time on an experiment station letterhead and signed by the director of the Ashland Experiment Station. The letter will say that there are a number of experiment stations through Upper Wisconsin and that what they have found out might be of value to a settler and to let him know if he can help anywhere.

After that will come a letter from the secretary of the Wisconsin Live Stock Association, the secretary of the Potato Growers' Association, the crop-reporting service, the State Horticultural Society from the State Board of Health and others, until you will almost surely be closing up your affairs and getting ready to move into Wisconsin.

Of course, if you answer any of those letters you get a real answer. If you ask to be referred to a reliable real estate firm, you will get excellent advice as to how to proceed, but you will not be referred to any particular real estate dealer. If you should ask about the reliability of some particular firm, you will be informed that "no complaints concerning the transactions of this firm have been made to us," or, not infrequently: "I regret to state that . . ." and enough particulars to make it plain that it might be advisable for you to do land business elsewhere.

The Teeth in the Law

Suppose you go in on your own hook, will that prevent your getting connected up with the Wisconsin Department of Agriculture? If you happen to settle along one Wisconsin railroad, it might, for a while at least. But on the other roads the Wisconsin machinery would probably work as usual, and, when you unloaded your household and farming equipment at the freight shed, the station agent would work over the waybill of your shipment and a set of carbon copies would go back down the line.

Before long the office of the agricultural-development agent belonging to the up-to-date railroads would know you were there and would be interested and active in your behalf, and the director of immigration, the county agent and the experiment station director would know. Somebody from these offices might drop round to see you and how you were getting along, but the Wisconsin cut-overs are very large and the available men are still very few. Whether anybody came round to your clearing or not, you would almost certainly begin to get helpful and hopeful letters and publications which "discuss the problems of land clearing and the protection of settlers from possible deception."

Suppose you do not see those little ads and happen to miss connections with the regular Wisconsin machinery and sign on the dotted line and later regret having done so? Does that leave you stuck or merely with permission to hire your own lawyer and sue? Maybe not. The real estate dealers in Wisconsin must be licensed, and the director of immigration is secretary of the real estate board.

The licensing law reads that the board "shall receive, consider and investigate complaints against any real estate broker or salesman, or may make any necessary investigation on its own motion, and may revoke any license" if, having investigated, it is convinced that there have been fraud, misstatement, untrustworthiness or incompetence on the part of land broker or salesman. There are teeth in the law.

There are many new and promising signs that the problems of the northern cut-overs are on their way toward a real solution, but they are not solved yet. There are two major problems: The first is a social matter, a matter of human relations, its answer to be found in the application of the Golden Rule—that matter of "matching up the man and his family and his pocketbook to the land and the chances to which the man and the family and the pocketbook are justly entitled." In this, Wisconsin is in the lead of all her competitors, but still has far to go."

DIVISION OF THE STATE FAIR

OLIVER E. REMEY, *Secretary*

VALUE OF STATE FAIR PLANT

REAL ESTATE—This consists of 147½ acres at $6,000.00 an acre, (value estimated by a committee of real estate men in 1921), $6,000 an acre for manufacturing purposes being the lowest valuation fixed by any member of the committee	$ 885,000.00
BUILDINGS AND CONTENTS—Value fixed by the State Department of Insurance in May, 1922	808,622.00
Total	$1,693,622.00

Since the last biennial report of the State Fair, that of 1919-1920, 504,997—237,014 in 1921, and 267,983 in 1922—saw this great mirror of the agricultural, educational, industrial and commercial life of Wisconsin, and came under its thousands of fine educational and inspirational influences.

Since the State Fair became a division of the Wisconsin Department of Agriculture in 1915, eight years ago, 1,751,916 have visited this great exposition, which not only ranks second to none in America in class, third in premium money paid to encourage improved production, fifth in attendance, but in its own state enjoys a distinctive and invaluable educational influence which cannot be exerted by any other agency, or combination of agencies.

Good State Fair Assured

The state of Wisconsin has wisely financed its great annual show window so that it always will be assured of a great State Fair, relieving those engaged in its management of responsibility for weather, bad economic conditions such as have prevailed during the past two years, and all other risks that are encountered in realization of any outdoor project appealing to public patronage. When the legislature in 1914-1915 made the State Fair a genuine state institution its policy, as expressed by its finance committee, was: "Wisconsin must have a good State Fair or none; a poor State Fair, even though it might prove exceptionally profitable financially, would react as a detriment to the social welfare and the advancement of the state."

Seventy-three years ago the State Fair came into existence, and ever since, with lapses during the Civil War and the World's Fair at Chicago, it has persistently widened and improved its influence, until during the past four years every county in the state has been represented in some of the exhibition departments.

GRAND CHAMPIONS ON OPPOSITE PAGE

1. Grand Champion Holstein bull, Walcowi's Ollie Hyland, exhibited by Baird Bros., Waukesha, Wis.

2. Grand Champion Holstein cow, Westview Walker De Kal, exhibited by Baird Bros., Waukesha, Wis.

3. Grand Champion Guernsey bull. Cherub's Pearl Royal of Shorwood, exhibited by H. L. and F. D. Stout, Mikana, Wis.

4. Grand Champion Guernsey cow, Ma Chere Princess, exhibited by H. L. and F. C. Stout, Mikana, Wis.

5. Grand Champion Ayrshire bull. Imp. Howie's King of Hearts, exhibited by Adam Seitz, Waukesha, Wis.

6. Grand Champion Ayrshire cow. Lucindy 2nd of Spring Castle exhibited by Adam Seitz, Waukesha, Wis.

7. Grand Champion Jersey bull, Modesty's Oxford Majesty, exhibited by W. H. Knight, Eagle, Wis.

8. Grand Champion Jersey cow. Fewacres Majesty Emily, exhibited by Frederick D. Underwood, Wauwatosa, Wis.

9. Grand Champion Brown Swiss bull, Vronicka's College Boy, exhibited by N. C. Schmid, Monroe, Wis.

10. Grand Champion Brown Swiss cow, Cinnamon's Brownie, exhibited by N. C. Schmid, Monroe, Wis.

11. Grand Champion Hereford bull, Brae Repeater, exhibited by Rott Bros., Wonewoc, Wis.

12. Grand Champion Hereford cow, Maple Lass, exhibited by J. C. Robinson, Evansville, Wis.

13. Grand Champion Aberdeen Argus bull, Bandell 2nd, exhibited by J. Tudor & Son, Iowa City, Iowa.

14. Grand Champion Aberdeen Angus cow, Olga 2nd of Whitewater, exhibited by A. A. Armstrong & Son, Camargo, Ill.

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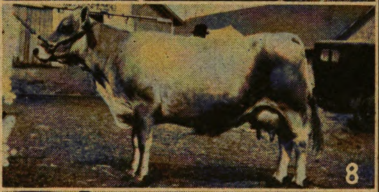
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Its growth during recent years has been so great that, although quite well equipped with buildings, exhibits, especially live stock, overflow quarters provided under roof, until as much space under canvas is required to present the State Fair as has been provided under roof.

Evidence of Exceptional Class

As examples of the class of the Wisconsin State Fair, in 1922 it presented a dairy show second to none given that year; its showing of dairy cattle was the best in America; its swine show was pronounced the best at all state fairs; its sheep show was accorded first place in America by the judges who officiated; its utility poultry show proved a model after which other state fairs will begin to pattern in 1923; its automobile show ranked second to but one automobile show given anywhere during the entire year; its display of farm machinery and other farm labor-saving devices was a mammoth exposition in itself; its newly revised educational department was by far the best at all fairs; its work of interest to women, in taking a new trend, has led all other big fairs in a new direction; its horse show was the grand champion of all the big fair horse shows; its farm boy and girl department was excelled by none, and its agricultural, horticultural, bee and honey and other departments did not suffer by comparison with those of any other state fairs.

One important reason for the continual intensive progress of the Wisconsin State Fair is the unusual efficiency of the men and women, nearly 100 in number, actively engaged in its direction and management, and the preparation and presentation of its many departments. This staff of workers has been chosen gradually because of qualifications for their particular work. Political and other influences, as well as inflated reputation, have been relegated. Then, after selections because of fitness have been made, the entire organization has been rounded into a smoothly-running, forward-moving unit that can mean only a successful State Fair, each year producing a better exposition than that of the year last preceding.

Cooperate With State Fair

Cooperating with those who direct the State Fair is every organization in the state which has for its aim promotion of agriculture. Every other educational agency in the state also cooperates, as well as the agricultural, weekly and daily press, and the many commercial organizations.

All of the national breed associations which have representation in Wisconsin not only cooperate in every other possible way, but many of them aid materially by offering liberal special premiums for exhibits.

The Wisconsin Live Stock Breeders' Association has appointed the following committee to aid in the promotion of the State Fair: E. H. Parker, Janesville, chairman; R. E. Reynolds, Lodi; Burlie Dobson, Lancaster; William Renk, Sun Prairie; J. P. Riordan, Mayville; Charles D. Hill, Rosendale.

Identified with the Wisconsin Live Stock Breeders' Association are all breed organizations in the state. Among other organizations identified with the State Fair are:

United States Department of Agriculture
Wisconsin Dairymen's Association
Wisconsin Farm Bureau Federation
Wisconsin Cheese Makers' Association
Wisconsin Butter Makers' Association
Wisconsin Society of Equity
Wisconsin Cheese Producers' Federation
Wisconsin Implement Dealers' Association
Wisconsin Potato Growers' Association
Wisconsin Bee Keepers' Association
Wisconsin Horticultural Society
Milwaukee Florists' Association
Wisconsin Automotive Dealers' Association
College of Agriculture, University of Wisconsin
Wisconsin Experiment Association
Wisconsin Colleges Associated
Wisconsin Department of Public Instruction
Wisconsin Department of Markets
Board of Normal Regents and Normal Schools
Wisconsin Federation of Women's Clubs
Milwaukee Association of Commerce
Milwaukee Chamber of Commerce

Exposition for All Classes

During the past eight years the Wisconsin State Fair has been directed to the end that, while promotion of agricultural activities must be outstanding, it shall be an exposition for all the people of the state, for these reasons:

Agricultural producers everywhere have been complaining for years of the markets for their products, and as a result better marketing methods are being organized by federal and state governments.

In other words, one of the big things to be accomplished today is to bring closer together producer and consumer, so that both may profit.

Agricultural workers produce and urban workers are the chief consumers of what they produce.

The modern fair is the best show window of the community, county, district and state, and therefore the place, in preference to all others, where producer and consumer should meet.

The successful fair manager of today first devotes all available funds—sometimes funds not available—and energies to planning and realizing his fair proper, which has to deal with the producer chiefly in the way of exhibitor.

Having organized his fair proper, he then plans to attract to the fair as many consumers as possible, so that they may become more extensive and intelligent buyers of agricultural products.

Then, when the consumer is given proper consideration, the producer not only acquires the benefits resulting from competition, but reaps a prospective commercial reward by having, at the fair, been brought in personal contact with the individual who will furnish the market for what he produces.

Following this policy, high spots in the success of the Wisconsin State Fairs of 1921 and 1922, and especially is this true of 1922, have been the extension of educational and inspirational influences toward the consumers. This is accomplished by showing the consumers what agricultural producers produce, what varied-uses can be made of agricultural products, their food values, why prices for best products should be higher, and so on.

In this special appeal the Wisconsin State Fair ranks first. It began it in a small way in 1915, but took its long step in 1922, principally in its dairy department—so long a step, in fact, that other fairs warned that the departure was too revolutionary in nature to survive. But this departure has succeeded far beyond expectations.

Proved Memorable Dairy Lesson

Commenting on the Wisconsin State Fair Dairy Show of 1922, **Hoard's Dairyman** said:

"We would not be doing justice to those responsible for the splendid dairy exhibit made at this year's Wisconsin State Fair if we failed to emphasize its value to the dairy interests. It was an unique exhibit, telling a story to the fair visitor regarding milk and its products which should be known to everyone throughout the country. It was not an abstract exhibit giving dry tables, diagrams, charts, but taught its lessons through concrete examples, by exhibiting live animals, and by showing how milk products should be used in the human diet and how they should be served. No one could visit this splendid display without gaining a lesson which would always be remembered.

"The farmer could not view the two pigs which were shown without comprehending the value of milk in the diet. One of the pigs was strong, robust, growthy, showing life and vigor; the other pig of the same age was about one-fourth or less the size, shriveled up, dull eyes, nervous movement, showing anything but growth and vigor. The larger pig had the same diet, except milk formed one of its constituents. The little pig, the scrawny fellow, had no milk.

"Two puppies, one large and vigorous, was ready for mischief; the other, of the same age, was dull, nervous, lacking in vitality. The robust dog, the dog ready to play with the boys, had milk as a portion of his ration. The other dog was denied milk. To any boy or girl with an inquiring mind, the demonstration of these two dogs could not help but bring to them the value of dairy products for their own proper development.

"For years the dairy exhibits at our fairs have been simply a carton of butter, a cheese, a bottle of milk—absolutely meaningless in themselves and rendering no real service either to the consuming public or to the dairy industry. This year's Wisconsin Fair will long be remembered, as practical demonstrations presented taught useful lessons which should be the aim and purpose of all fair exhibits."

The **Dairy Record**, of St. Paul, in advocating improvement of the dairy department of the Minnesota State Fair, suggested to the managers of that great exposition that they "devote some space to an exhibit which would drive home the lesson of milk and milk products to the consuming public—such an exhibit as was provided by the Wisconsin State Fair."

Revolutionizes Future Dairy Displays

The **Butter, Cheese and Egg Journal,** Milwaukee, said:

"A radical departure from established practices in staging state fair dairy exhibits is attracting unusual attention in Dairy Hall at the Wisconsin State Fair. It has always been considered quite the proper thing to make a large display of butter and cheese, the predominant feature of the dairy exhibit; in fact, this is the practice heretofore in vogue at all state fairs.

"It has remained for the progressive men who are prominent in Wisconsin's dairy industry to depart completely from this plan and to feature an educational program that promises to revolutionize such displays in the future. All premiums for butter and cheese were withdrawn, consequently the visitor does not see the usual big exhibit of the golden product for which Wisconsin is famous throughout the world. In place of these displays the visitor finds numerous interesting and educational features which emphasize the greatness of the state's dairy industry and the wholesomeness and value of dairy products.

"The State Fair management was fortunate to secure the active cooperation of the U. S. Department of Agriculture and the National Dairy Council. Officials of these institutions have left nothing undone to make the new departure a success and to recognize the possibilities it offers. The entire east side of Dairy Hall is given over to the U. S. exhibit, the same exhibit that attracted so much favorable attention at the 1921 National Dairy Show. The Wisconsin Agricultural College, the Wisconsin Bureau of Markets and the various exhibits by the National Dairy Council occupy the remaining space around the buildings, leaving the mammoth refrigerators for the demonstration displays in which the food value of dairy products is emphasized.

"'It is our plan,' says Mr. Harry Klueter, Superintendent of Dairy Hall, 'to emphasize the superior food value of dairy products and to stage a complete dairy show.' One is impressed by the fact that Mr. Klueter and his corps of assistants have accomplished a complete dairy show. The big refrigerators are filled with exhibits calling attention to the various uses to which dairy products may be put in the human diet. Various recipes and suggestions are distributed in the form of booklets.

"It may truly be said that this new departure not only lends increased interest for the visitor, but it furnishes needed education. Dairy products play an important part in furnishing our food supplies, and to know more about them is the privilege enjoyed by State Fair patrons."

Comment of Agricultural Press

That the State Fair has come to be the kind of annual exposition the great state of Wisconsin feels properly represents its varied interests has been manifested in the generous praise of patrons in both 1921 and 1922. Comment of leading agricultural journals on the State Fair of 1922 is herewith presented, that the reader of this report may learn of the value of the Badger State's annual exposition from others.

Culled from a fine report of the 1922 State Fair, covering many pages in its issue of September 9, the following composite comment is presented from **The Wisconsin Agriculturist,** of Racine:

"The 1922 State Fair is over and pronounced a success. Out of the work and planning for the exposition have come results. A better advertisement of the farming industry has been presented both to our town cousins and to ourselves. Knowledge and understanding of farm problems have been more widely spread. All our agricultural fairs, large and small, help to do this.

"Several distinct movements for better products, better herds, and better advertisement of our most important points of agricultural industry have been started this fall.

"One of the greatest of these aims is to raise a fund to advertise the state of Wisconsin and particularly the milk products of Wisconsin to the whole world, as it should be.

"More and more every year the aims of the State Fair management point toward education. This work proves most effective when actual demonstration of the different lines is carried on before the eyes of visitors. Action gets attention and this fact has been made use of wherever possible in all departments. The work of different institutions shown at the State Fair takes the form of performances carrying out the ideas before the eyes of the visitors.

"To the State Fair, they come each year by thousands. It is almost their one chance to see with their own eyes the products that make Wisconsin great among the states, and to feel that they know of and possess a share of it.

"The Wisconsin State Fair this year, the seventy-second annual fair, was the greatest ever, although that is a commonplace expression that doesn't begin to tell how great the fair was. Each year is the greatest ever. The fair is constantly outgrowing itself and new accommodations for the exhibits are no sooner provided by the legislature and the Fair Board than it is found that they are insufficient and in spite of new buildings, there usually is a mammoth overflow exhibit.

"Every county in the state was represented in the exhibits, twenty-one of them as units in the county exhibits and all the others in some of the agricultural branches in which they excelled.

"Never before at the State Fair were all points so well covered as they were this year in the county booths in the section devoted to farm crops and county exhibits.

Record for Central West

"The live stock exhibit at the Wisconsin State Fair has set a mark for the Central West in many different respects. It was by all means the largest dairy show so far as state fairs are concerned that was ever held anywhere in the country.

"The judges of swine were free in their statements that never before had more real utility hogs been shown than were shown this year at our Wisconsin Fair.

"The beef cattle men also came in for a large amount of praise for the increased numbers they showed this year and for the better condition in which their animals were led into the ring.

"The cattle barns were full to overflowing; in fact, there were five separate tents put up in order that the 1,209 head might be stabled in as much comfort as possible.

"The horse show from a draft horse standpoint was fully as large as any show ever held at Wisconsin and attracted a number of men who had never shown heretofore. A few of these men were fortunate in getting some of the leading prizes. Not a few of them went away with championships. Altogether it may be said that the live stock show at Wisconsin is more or less of the show window of what Wisconsin's leading industry is.. More than 75 per cent of the total gross profits of Wisconsin agriculture comes from the sale of live stock or live stock products, consequently the visitor at Wisconsin State Fair has an opportunity of seeing just how it is possible for him or her to improve the conditions at home, so that they may be able to make larger net returns from the farm than has been the custom.

"Cattle were swarming all over the place, the barns were full, the tents were full and they seemed everywhere, the fine dairy cattle that make Wisconsin the greatest of dairy states and beef cattle about which less is heard, but which nevertheless are an important factor in Wisconsin's farm wealth. There were cattle from every county in the state. Rock county alone had nine carloads of live stock and its breeders were out in force for their share of recognition. There were fifteen complete county herds. There were 120 individual Holstein exhibits, seven Angus, ten Shorthorns, seven Herefords and Guernseys, Jerseys and other dairy breeds in like proportions.

"The live stock show was bigger than ever before and it was better in just that proportion that constructive breeding and intelligent feeding and farming is improving the type of cattle and hogs each year.

"And so through the whole fair. One of the most interesting and best patronized exhibits was the Women's Department, in charge of Mrs. Nellie Kedzie Jones. The demonstrations included home management, clothing, cooking and various other proofs of the fact that Wisconsin homes in general and Wisconsin farm homes in particular are on as high a plane as Wisconsin agriculture.

"The State Fair dairy show this year was educational and no longer competitive. This was a radical change from the manner of displaying Wisconsin dairy products at the fair in former years. Hundreds of competitive exhibits, the best in each county, were gathered together, scored and prizes given for products which scored but few points better than other samples, the fact being that the entire exhibit was gilt edge and highest quality of butter and cheese. It has been thought best to change the method of advertising Wisconsin as a dairy state and the interest which the exhibit this year excited surely shows that the change was justified. The great dairy building was thronged with people every day.

"The State Fair horticultural exhibition was highly representative of Wisconsin's 3,900,000 orchard trees and 8,000 acres of small gardens, as well as the thousands of acres of truck crops. Visitors who were not gardeners feasted their eyes upon the choicest and most complete displays of fruits and vegetables ever presented in the 323 classes of fruits, vegetables and flowers.

Exhibit of Active Machinery

"A Wisconsin State Fair that would not feature a great exposition of modern machinery would not thoroughly represent the spirit of the modern Wisconsin agriculture.

"The 1922 show was surely up-to-date and standard. All the classes of labor-saving and profit-producing machinery were presented, from dishwashers in the home department to the great 40-inch cylinder thresher operated by the 72-horse-power monster gas tractor, the most powerful on the grounds.

"Demonstrations were the spirit of the 1922 State Fair machinery show. This was proved by the throng of people seen at all times around the exhibits of running machinery. The largest of these individual demonstrations showed tractors operating all at the same time, rock crushers, centrifugal pumps, cement mixers, road machinery of all kinds, including graders, packers and smoothers, saw mills for cutting lumber, portable mills for wood sawing, plows and tillage tools of every description, spreaders, balers, silo fillers, cultivators, mowers, seeders and stump pullers.

"This continuous performance was a lesson to every exhibitor, for the crowd of interested visitors scarcely decreased from early morning till late at night. The man who missed seeing any part of the modern machinery equipment at the State Fair this year was hard to find. There was scarcely anything missing.

"We are thoroughly convinced that modern conveniences are as necessary for the farm home as for the town residence; in fact, even more so, and we shall rejoice when the time comes when every farm home in every county shall have a part in the benefits of these splendid inventions which lighten the housewife's labor and brighten the hours spent in the cheerfully lighted, comfortably heated and well-supplied rooms of the farmstead.

"With everybody who hasn't got an automobile wishing they had one and everybody who has one wanting a new one, the automobile show took its place as one of the big attractions of the fair. The display was the biggest ever staged in Wisconsin, not barring the midwinter show in Milwaukee and the crowds which inspected the cars, discussed prices and gave orders for a good many of them were the largest that ever has attended.

"The State Fair isn't all instruction or improvement. The entertainment side is highly developed, and there was entertainment for all. There were delightful band concerts for those who liked to sit in some comfortable chair and listen; there were the races, and the shows. The carnival company which has appeared during previous years was there, with its exhibit which, although calculated only to be light and entertaining, still maintained the high standard of propriety which the fair board demands."

Bigger and Better Yearly

Taken from the comprehensive report of the 1922 State Fair is the following comment of the Wisconsin Farmer, Madison:

"From year to year Wisconsin's State Fair grows bigger and better, and the big 1922 exhibit which closed last week was the biggest in state history and Wisconsin's greatest fair.

"All of the energies of the 1922 State Fair were centered on the non-exhibiting patron; in other words, the consumer, to the end that more consumers shall become intensive and intelligent buyers of high-grade Badger State products.

"During past years the big agricultural expositions have devoted their energies chiefly to production—offering hundreds of thousands of dollars annually for exhibits. This all of the big expositions will continue to do.

"The Wisconsin State Fair, however, will not only continue to encourage high-class production, but it will begin to encourage it in another and more substantial way as set forth—by improving and widening the markets for the producers. To this end the exhibits of three important departments have been revised, among them the dairy department. It remained for this year to see a dairy department at the State Fair in keeping with the Badger State's position as the leading dairy state of the Union.

"The Wisconsin State Fair dairy exhibit in 1922 was the last word in a dairy exhibit, and associated in its presentation were representatives of all the dairying industries of the state.

"Two other big features of the 1922 State Fair were the reorganized educational and women's exhibits and demonstrations. This year premiums were offered as usual for school work, but the educational exhibit also showed what Wisconsin is doing in an educational way, with exhibits from the University of Wisconsin, all of the smaller colleges, the normal schools, the 47 vocational schools, the state department of public instruction, the Platteville mining school, Stout Institute, St. John's Military Academy, schools for the blind and deaf, day schools, and the Milwaukee school department.

"This exhibit filled a building 240 feet long by 75 feet wide, and the second floor of the grand stand, 300 feet long by 100 feet wide.

"During past years the Wisconsin State Fair has confined its women's department chiefly to exhibits of fancy work, china painting and culinary vegetables. This year these exhibits were discontinued and in their places were demonstrations conducted by the home economics and extension departments of the University of Wisconsin, showing, among other activities, proper preparation of foods, home management and the making of clothing for the family. These demonstrations were of real interest to every woman.

"Exhibits of interest to women also were found in the dairy, poultry, bees and honey and horticultural departments.

"The time is not far distant when women of the state will have been so greatly interested in the work of the State Fair that a new women's building will be forthcoming.

Producers Greatly Encouraged

"While the consumer was in the spotlight all through the 38 departments of the big exposition, production was more encouraged than ever, and was greater than ever.

"For two years the Wisconsin State Fair has presented the greatest show of dairy cattle in America, not excepting the National Dairy Show.

"Swine experts pronounced the State Fair swine show the best in the United States. The sheep show was excelled by perhaps only one other state.

"For three years Wisconsin has presented the best horse show at night seen at any state fair and this year's show was the best ever given.

"The poultry show has grown to such proportions that it has been necessary to drop classes for pigeons, rabbits and pet stock until an addition to the poultry building is erected.

"There were many new features in the department devoted to agriculture and county exhibits, and this department was the strongest the state fair ever has shown. Supplementing the agricultural exhibits were displays and demonstrations by the Wisconsin Department of Agriculture, the Marketing Division, and Agricultural College of the University of Wisconsin.

"The Immigration Division and other agencies again impressed the desirability of unsettled land in northern Wisconsin upon the farm homeseeker. In this connection, it may be recalled that thousands of acres of land in northern Wisconsin have been reclaimed for production through exhibits shown at the State Fair.

"The horticultural department, for many years one of the best features of the state's great annual exposition, again showed development, through augmented fruit and floral exhibits.

"The bee and honey industry was represented in 1921 with the best display shown at any State Fair, and this department was even stronger this year. Exhibitors pronounced it the most complete exhibit in the country.

"Each year the greatest programs of entertainment shown anywhere in the world are seen.

"There were four days of harness racing and two days of automobile racing. The big feature of the harness racing was the appearance of "Pop" Geers, the famous trackman, driving Sanardo, the world's champion gelding.

"The railroads of the state cooperated with the Fair Board and granted a special rate of one and a third fares for the round trip. The street car and bus service to the grounds was also adequate and well managed.

Need of Better Equipment

"More than ever was the problem of congestion at the fair brought home to the management this year. Under the present arrangement of buildings and exhibits there is an immense loss of efficiency in management and of time and pleasure on the part of visitors. Much of the time of the great crowds is spent in extricating itself from its own mass, which also detracts from the enjoyment and educational advantages of the fair. What must be done is to increase the fair grounds and the size and number of the buildings to take care of the crowd. The Wisconsin State Fair has now become one of the great fairs of the country and should have adequate and permanent buildings. Special parking space for automobiles will have to be provided either outside of the grounds or by the enlargement of the grounds. At present the regulation of automobiles on the grounds has become a great task.

"In the opinion of the fair managing board the congestion at the fair is the real problem and in the solution of this the crowds must be better distributed. This distribution can only be accomplished by increasing the number of exhibit buildings and locating them in different parts of the grounds. The crowds will be where the exhibit buildings are located. The buildings at the state fair are practically all too small. They were built when the fair was only half as large as at present; for instance, the attendance in 1914 was 104,909; in 1920, 327,394, and this year 267,983. Many of the buildings, as, for instance, the county exhibits and farm crops and horticulture buildings, were erected from the insurance money secured from their predecessors before the fire. They are, therefore, altogether too small and neither properly accommodate the exhibits nor the crowds.

"The same may be said of the dairy building housing this great industry in this, the greatest dairy state. Half of the cattle have been in tents the last two years, so also the poultry. Wisconsin has no women's building, and an educational building that in no way measures up to Wisconsin's system of education. There is no building for inside machinery exhibits; neither is there a merchants' and manufacturers' building.

"The boys' and girls' and the teachers' camp, two of the most important departments at the fair, must be housed in tents.

"The stock judging pavilion or coliseum is a real building, though also too small.

"The swine will need the sheep building as well as the swine building to accommodate them very soon and a new sheep building will be needed. There is a real automobile building, and that was pieced out of an extension this year and the trucks were outside.

"The grand stand is only half built and has no roof. Funds, however, were provided by the legislature to complete the building without a roof.

Character of Fair Changed

"Wisconsin live stock breeders showed faith in the future and intense loyalty to a state fair which provides meager facilities for them by presenting one of the largest and best pageants of animal husbandry which this commonwealth has ever seen. The glory and pride felt in the splendid exhibits of live stock was mingled with the feeling that Wisconsin has reached a point where further patronage of the state fair by progressive breeders cannot go on at the present rate without steps being taken by the legislature to extend and enlarge the stables and herdsmen's accommodations.

"Would not the annual expenditures made for extra tent crews, lumber and apparatus used in providing these temporary fair shelters go a long way toward laying the foundation for a new beef barn, perhaps, or an extension to the hog pavilion so that swine men need not invade the sheep house, or the cattle men need not elbow the horsemen out of their places? Certainly the time has come for decided action. Brisk movements are already under way by stockmen to petition the legislature for appropriations which will at least pave the way for necessary new buildings.

"The character of the entire Wisconsin stock show has changed wonderfully for the better in the past ten years. The attention of the

Fair Board has been called to this improvement and many members of the board told representatives of the Wisconsin Farmer that the only thing which will maintain this progress year by year is to provide the housing facilities so badly needed. Premiums offered are comparable to any now given on any of the State Fair circuits."

Must Have More Buildings

Again, in its issue of September 21, the **Wisconsin Farmer** in an editorial said:

"It was only five or six years ago that people who visited the state fairs of Wisconsin and Minnesota commented upon the magnitude of the latter as a live stock and farm crops' exposition and lamented the progress of the former by comparison. Wisconsin's fair was then a "pumpkin show" in number of exhibits and style of presentation. It was simply an overgrown county fair, with little or no organization or objective. The management was zealous enough, the spirit was right, but the lack of support from the legislature and the people at large had stifled its growth.

"Now things are different. Wisconsin this year had a live stock show that beat Minnesota in numbers by several hundred head. The quality was fully equal in all lines, and better in most dairy breeds. The attendance at the Wisconsin fair was nearly 270,000, which puts it close up to the Minnesota rank from that standpoint—perhaps as close as can be expected when the geographical location of the two fairs are considered. Wisconsin's fair is even more of a truly farm exposition today than that of Minnesota, as the latter caters to the pleasures of Twin City crowds. Wisconsin's fair has been put where it stands on agricultural support by the rank and file acting individually and in collective groups.

"The state legislature has not yet done its best to aid our state fair, but it will at the coming session. In this we can take a lesson from Minnesota's splendid grounds and ample, imposing buildings. Not reckless expenditures, but wise expansion for improvements will meet the approval of those who have patronized the state fair and made it successful under severe handicaps."

Supplementing praise of the class of the State Fair presented by all of the agricultural press came that of the daily and weekly newspapers of the state—all strong in their commendation and emphasizing the necessity of assuring the continuance of improvement of the State Fair by providing necessary building accommodations.

Important Facts to Remember

Appropriations for the State Fair, whether for new buildings and other equipment, operation or maintenance, or the cost of operating the State Fair, cannot be properly considered unless there is realization of the fact that the State Fair still is in its primary equipment and promotion period.

The Minnesota State Fair and Iowa State Fair, for instance, long ago reached the state of completed projects, both in plant equipment and operation necessities. The system followed in the upbuilding of these great expositions was first to establish plants with which to do business, then establish fairs such as these states merited.

From the time of its establishment on its present location, in 1892, the Wisconsin State Fair never was up to requirements in plant accommodations, and during this time there have been many periods when the public was dissatisfied with it.

When the State Fair became a division of the Wisconsin Department of Agriculture in 1915, there were turned over to present officials of the State Fair an inferior plant and an inferior State Fair, against both of which there was pronounced public sentiment.

These conditions were not due to lack of efficiency on the part of the majority of those in charge of the direction of the exposition at that time, but rather to an improper system of financing the State Fair.

Beginning in 1915, the policy followed has been to provide the kind of State Fair to which Wisconsin is entitled, depending upon the excellence of this kind of State Fair to ultimately bring receipts to the point where they will meet expenditures.

If the present management of the State Fair could have started out in 1915 with a fully equipped plant, and an exposition which the entire state appreciated as it is beginning to appreciate the present State Fair, there can be no doubt of the contention that receipts at the present time would meet expenditures.

A few facts in proof of this statement are herewith presented:

Over $25,000.00 is lost each year through lack of grand stand facilities.

An adequate manufacturers' building would mean an additional revenue of at least $25,000.00 a year.

Proper equipment of the concession department in the matter of dining halls, additions to buildings which would permit of sale of more space for commercial exhibits would mean another $25,000.00.

A properly equipped State Fair, where patrons would enjoy comforts to be enjoyed at Minnesota and Iowa, for instance, would mean an additional $50,000.00 or $100,000.00 in outside gate receipts.

As set forth, there can be no fair consideration of State Fair needs or the following receipts and expenditures since 1915 until the facts presented above are given due consideration:

Years	Receipts	Expenditures
1915	$ 74,954.80	$116,416.94
1916	99,960.25	149,131.25
1917	108,022.00	124,062.17
1918	110,958.89	142,445.78
1919	148,891.43	190,474.53
1920	223,879.75	263,752.20
1921	164,358.44	270,266.16
1922	177,477.31	272,695.46

Board Asks New Buildings

While the future of the State Fair is bright indeed, and there is every indication that the 1923 exposition will prove stronger in every direction than that of 1922, those in charge of the State Fair face two very serious problems—need of adequate under-roof space for exhibits, and necessity for lengthening the State Fair at least two days, and providing strong attractions for these additional days, in order to increase revenues.

These problems are made doubly difficult because of the desire of

State Fair officials to cooperate with the state administration in keeping down costs and expenses.

With reference to additional space for accommodation of exhibits, there are three expedients:

Erection of needed buildings, meaning an outlay of about $1,060,000.00 in one year, and therefore out of consideration.

Erection of permanent roofing over space occupied by overflow of exhibits, meaning an outlay of about $50,000.00.

Continued use of canvas, which means an outlay in rentals of about $4,000.00 each year.

After very thorough consideration of lack of buildings, the State Fair Advisory Board has decided to ask the legislature for the following buildings:

Addition to cattle barn accommodating 1,000 head, and costing	$100,000.00
Extension of the sheep and swine pavilion to the poultry building, a distance of 300 feet, and meaning an addition 300 by 100 feet, at an estimated cost of	35,000.00
Women's building, probably costing	100,000.00
	$235,000.00

There is already appropriated $150,000.00 for extension of the present concrete grand stand, and $25,000.00 for the construction of tunnels under the race track for use in parking cars within the race track. The Advisory Board has voted that this appropriation be made available either for tunnels or bridges over the track, some members of the board believing that bridges will prove more serviceable than tunnels.

That the Advisory Board has been conservative in its request of the legislature is demonstrated by the following list of new buildings imperatively needed at the present time:

Building doubling the size of the automobile building, which contains 55,000 square feet of space, probably costing	$ 75,000.00
Merchants' and manufacturers' building, probably costing	250,000.00
Women's building, costing	100,000.00
Addition to cattle barn, costing	100,000.00
Extension of sheep and swine pavilion, costing not less than	35,000.00
Addition to dairy building doubling size, costing	50,000.00
Agricultural building costing	100,000.00
Educational building, costing	100,000.00
Lavatories and wash rooms under all new buildings, costing	100,000.00
New dining halls and concession buildings, costing	100,000.00
New office building, costing	25,000.00
New east side entrances, with approaches	25,000.00
	$1,060,000.00

That the above estimates cover plans only for the most practical of structures is demonstrated by the fact that the Canadian National Exhibition, at Toronto, has just completed a stock judging pavilion at a cost of $1,500,000.00, and the Minnesota State Fair has just completed a new cattle barn, accommodating 1,000 head, at a cost of $450,000.00.

Breeders Demand Cattle Barn

That the Advisory Board in asking an additional cattle barn is fully warranted in making the request is demonstrated by the fact that the following petition to the legislature was signed during the 1922 State Fair by every exhibitor of live stock at the 1922 State Fair:

We, the following exhibitors of live stock at the 1922 Wisconsin State Fair, held at Milwaukee, August 28 to September 2, respectfully petition the legislature of Wisconsin to appropriate sufficient funds for the erection of adequate accommodations for housing cattle exhibited at the Wisconsin State Fair, and in presenting this petition we respectfully call the attention of the legislature to the following facts:

(1) The Wisconsin State Fair cattle pavilion accommodates 610 head of cattle, while a total of over 1,500 head of cattle were exhibited in 1922, making it necessary for the State Fair to furnish makeshift accommodations for nearly 1,000 head of cattle.

(2) The exhibits of dairy cattle at the Wisconsin State Fair for several years have been the best exhibits of dairy cattle in America each year. This enviable record cannot be maintained unless acceptable accommodations are furnished for exhibitors.

(3) The State Fair each year is of inestimable value in encouraging the breeding of high-grade dairy cattle, and therefore also the dairy industry in the state, but this excellent influence cannot be maintained without proper accommodations for exhibitors.

(4) Unless the State Fair is provided with funds for the construction of accommodations asked for in this petition, there is serious danger of Wisconsin's great State Fair, now second to none in the United States in class and educational effect, going backward, which the breeders whose names are attached to this petition, and others, would regard as a commercial and educational calamity.

(5) All of the residents of Wisconsin whose names are attached to this petition are taxpayers of this state, some of them very large taxpayers, and it is their opinion that one of the most important projects in the interest of breeders of this great state is the realization of the project petitioned for.

Makeshift Accommodations Are Costly

A survey of the list of new structures needed immediately may lead to the impression that the State Fair has practically no building accommodations, which would be an unfortunate conclusion.

Many fine structures grace the State Fair grounds, the total valuation placed on these buildings by the State Department of Insurance being $800,000.00.

The State Fair, however, has grown so rapidly during the past four years that at least double the present under-roof space is required, if all exhibit departments are to be adequately housed.

When weather is fine, presenting fifty per cent of the State Fair under canvas passes without much criticism, but when there are rains and high winds during the fair period dissatisfaction on the part of exhibitors is much in evidence.

Then, money paid for rental of canvas is expended in temporary relief only and is of no permanent benefit.

When temporary accommodations are required for exhibits, it is necessary to wait until the last moment to provide them, because the aim is to furnish no more than are necessary, and this generally means highest labor costs by carpenters and others.

To say that the State Fair cannot get along without the new buildings scheduled would be a preposterous statement, because it has gotten along during the past four years under conditions it will face again in 19223, if no additional buildings are provided.

However, those in charge of the State Fair feel that shortage of under-roof space means the unnecessary expenditure of many thousands of dollars each year, not to mention dissatisfaction on the part of exhibitors and patrons with crowded conditions.

It may be mentioned, also, that there is some hope of relief from private sources.

The Milwaukee Automotive Dealers' Association will erect an addition to the automobile building, doubling the space of that structure, under certain conditions.

Manufacturers of Milwaukee just before the World War were considering the project of erecting a manufacturers' building, to be paid for from the sale of exhibit space and finally turned over to the State Fair. The great war, however, stifled this project, and bad economic conditions following the war have had the effect of keeping the project dormant.

Supervisors of Milwaukee county also were considering just before the World War the project of presenting the State Fair with an adequate agricultural building, but this project met the same fate as that of the manufacturers' building, for the same reasons.

When commercial conditions improve, the manufacturers' and agricultural buildings may be realized from sources as set forth.

The addition to the automobile building still is in prospect, if the state cares to meet the conditions offered.

It seems that building requirements of the State Fair are so mammoth that it will be necessary, if they are to be realized, to enlist aid from private sources as set forth above.

More Funds for Operation

It will be necessary to increase the appropriation for operation in 1923 to $250,000.00, from $230,000.00, to take care of the evident increased magnitude of the 1923 State Fair, if percentage contracts are to be discontinued.

The maintenance appropriation should be not less than $25,000 a year for 1923 and 1924, and this hardly is sufficient to make necessary repairs on the $800,000.00 worth of buildings, streets and the water and sewerage systems.

The State Engineer recently made a survey of maintenance work necessary on the State Fair grounds, and the total estimate for the two years according to his recommendations is $65,700.00.

The usual appropriation of $5,000.00 annually for new equipment probably is sufficient for each year during the next biennial.

The following is an outline of maintenance work considered necessary by the State Engineer in a survey made in August, 1922:

PROJECT 1	Repairs to roads This includes crushed stone and labor.		$ 3,800.00
PROJECT 2	Repairing and relaying concrete sidewalks and gutters Gutters and sidewalks are broken in a number of places, which must be removed and repaired. On the main street fronting the administration building there is a stone curb which should be removed and replaced with a concrete curb and gutter.		2,000.00
PROJECT 3	Repairing and replacing present wood fence on the race track		1,000.00
PROJECT 4	Plumbing repairs for the different toilets to grounds and buildings		2,500.00
PROJECT 5	Repairs and replacement of broken glass		1,000.00
PROJECT 6	General painting of buildings		7,000.00
PROJECT 7	Sheep and swine barn—		
	Carpenter repairs	$ 600.00	
	Repairs to roof	800.00	
	Repairing and replacing gutters and downspouts	300.00	
		$1,700.00	1,700.00
PROJECT 8	County exhibits building This includes painting and general carpenter work.		500.00
PROJECT 9	Poultry building This project covers carpenter work, roofing, gutters, and other miscellaneous work.		850.00
PROJECT 10	Automobile building—painting metal sash The metal sash in this building is beginning to rust and should be given a thorough cleaning and three coats of paint.		1,500.00
PROJECT 11	Concrete grand stand—repairing concrete seats		900.00
PROJECT 12	Repairs to general electrical work in grand stand		300.00
PROJECT 13	Painting metal sash of grand stand		700.00
PROJECT 14	New concrete walk back of grand stand		900.00
PROJECT 15	Health and food building—general repairs to roof, electric and carpenter work This building is very poorly constructed. The above repairs will make it usable until replaced with something more substantial.		
PROJECT 16	General repairs for Badger dining room		400.00
PROJECT 17	Stock judging pavilion—general repairs to seats, windows, and roof, including gutters In 1921, this building was thoroughly gone over, which has put it in very good condition.		500.00
PROJECT 18	Cattle barn—general repairs to roof, electrical and carpenter work		500.00
PROJECT 19	Poultry house—general repairs		300.00
PROJECT 20	Dairy building—general repairs including painting, carpenter work and roof		500.00

PROJECT 21	County building—repairs In 1921 this building was remodeled and general repairs have been made.	100.00
PROJECT 22	Remodeling and extending water and sewer system At the present time, fire protection on the premises is not adequate. More hydrants should be installed, and appropriate fire equipment building, housing ample fire extinguishing apparatus.	25,000.00
PROJECT 23	Bee and honey building—repairs This building was remodeled in 1921.	200.00
PROJECT 24	General repairs to barns D, M, N, L These barns are about 30 years old. This project covers all general repairs.	2,000.00
PROJECT 25	Boys' and girls' exhibit building—general repairs The present building is of wood and in very poor repair. As this department is growing, the present building should be replaced by a new one—cost $30,000.00.	600.00
PROJECT 26	Repairs to front entrance, including gates and woodwork	300.00
PROJECT 27	Administration building—general repairs	250.00
PROJECT 28	Remodeling heating plant of administration building into hot water	3,500.00
PROJECT 29	Hospital and rest room—general repairs, in cluding interior painting	600.00
PROJECT 30	Hot water heat—hospital and rest room The heating in this building to be connected to the boiler in the administration building.	1,800.00
PROJECT 31	Barns H, I and J The above barns have slate roofs and are in good condition.	300.00
PROJECT 32	Forage barn—repairs This is a very old building. The above amount will be about what is required to keep it in a usable condition.	250.00
PROJECT 33	Farm model barn—repairs to concrete and mason work $200.00 Electric and carpenter repairs 100.00	300.00
PROJECT 34	Farmers' dining hall—general repairs, including concrete floor, carpenter work and new roof	1,500.00
PROJECT 35	Horticultural building—general repairs	250.00
PROJECT 36	Three concrete speed barns—repairs General condition is O. K.	100.00
PROJECT 37	Farm colony and other small buildings—general repairs	600.00
PROJECT 38	Open performers' stand. Caretaker's cottage, well, pump house, lunch counters, cell house, helps' dining room, police station, general repairs and maintenance on above building	1,200.00
	TOTAL	$65,700.00

LENGTHEN FAIR TWO DAYS

The great annual cost of the State Fair—and the Wisconsin State Fair is operated at much less cost than any other fair in its class—makes it imperative that revenues be increased by lengthening the fair two days—opening on Saturday and running through one Sunday, providing suitable attractions can be obtained for these two days, and a program arranged for Sunday that will be in accord with proper observance of Sunday.

Thousands who desire to see the State Fair are unable to patronize it because their employment, or business, requires their personal attention during all of the week days the State Fair is in operation.

If a Sunday program meeting the approval of everybody could be arranged, these thousands now prevented from seeing the State Fair could no doubt take advantage of the opportunity thus presented.

This applies to those engaged in agricultural pursuits within 100 miles of the fair grounds, as well as residents of Milwaukee and nearby cities.

It is estimated that on many Sundays 200,000 people are found in the Milwaukee public parks.

Why not open the State Fair to these citizens on one Sunday of the many on which public parks are attractive during the summer months?

In 1922 while exhibitors were busy preparing for the opening on Monday, August 28, over 20,000 people strolled about the State Fair grounds on Sunday, August 27.

It is believed that if a strong automobile or motorcycle racing program, or a good program of running races, is presented on the Saturday before the usual opening Monday, patronage will warrant the departure.

It is expecting too much, good business men believe, for receipts of the State Fair, when lack of plant facilities is considered, to meet expenditures of operation, when operation costs exceed $230,000.00 for six days and six nights, and especially when about $100,000.00 represents premium payments from which the direct financial return is necessarily small.

It must be remembered, however, that if the State Fair received, instead of its present operation appropriation, the same percentage of premium money paid out given to the average county and district fair, the State Fair would show each year a substantial balance on the right side of the ledger.

Those in charge of the State Fair are at work on plans looking to the extension of the State Fair in 1923 from an exposition lasting six days and six nights to one lasting eight days and eight nights, providing programs meeting general public approval can be arranged.

Statistics of State Fair

The following tables covering gate and grand stand receipts, attendance by days for nine years, paid and other attendance for eight years, paid and free admissions by days, number of exhibitors by departments, premiums paid in eight years, show the magnitude and continued growth of the State Fair:

PAID AND OTHER ATTENDANCE FOR EIGHT YEARS

Year	Paid	Compli-mentary	Exhibitors, employees, concession-aires, etc.	Children free	Total	Compli-mentary per cent of attendance
1922	156,525	3,663	49,441	58,354	267,983	(a)1.33
1921	138,186	3,256	49,040	46,532	237,014	1.37
1920	231,205	4,857	45,227	46,105	327,394	1.9
1919	151,962	2,598	42,183	45,352	242,095	1.1
1918	113,117	3,453	30,670	41,352	188,592	1.9
1917	113,166	6,877	30,428	38,421	188,887	3.6
1916	105,504	4,892	29,255	32,969	172,620	2.8
1915	74,721	4,500	20,032	27,978	127,271	3.5

(a)Attention is called to the fact that the percentage of complimentary was the lowest in eight years, with the exception of 1919, when it was 1.1.

STATE FAIR ATTENDANCE BY DAYS FOR NINE YEARS

	1922	1921	1920	1919	1918	1917	1916	1915	1914
	--------	--------	--------	--------	--------	--------	7,574	--------	--------
Sunday	[9]61,796	[8]61,105	[1]60,911	[2]56,473	[3]50,603	[4]47,769	[5]43,101	[6]36,255	7,768
Monday	40,967	22,745	37,201	17,925	12,297	16,868	10,025	10,994	21,527
Tuesday	45,220	38,864	58,359	29,116	14,148	37,912	27,595	24,690	29,974
Wednesday	66,980	66,008	114,987	91,245	75,944	46,141	59,070	38,937	29,509
Thursday	24,027	25,741	31,529	35,155	27,959	30,642	18,119	16,395	[7]15,221
Friday	[10]28,993	22,551	24,407	12,181	7,641	9,545	6,336	--------	--------
Saturday									
	267,983	237,014	327,394	242,095	188,592	188,887	172,620	127,271	104,999

[1] 46,102 children free.
[2] 45,352 children free.
[3] 41,352 children free.
[4] 38,421 children free.
[5] 32,969 children free.
[6] 27,978 children free.
[7] 2,301 children free.
[8] 56,432 children free.
[9] 47,514 children free.
[10] 10,840 children free.

ATTENDANCE BY DAYS CLASSIFIED

Days	Adults (paid)	Children (free)	Children (paid)	Delivery (paid)	Association of Commerce (paid)	Boys and girls camp (paid)	Complimentary	Employes	Exhibitors
Monday	7,753	47,514	--------	43	534	78	331	461	1,123
Tuesday	27,306	--------	2,911	41	1,991	56	558	701	1,958
Wednesday	28,054	--------	3,127	41	3,866	77	706	748	2,320
Thursday	41,534	--------	3,499	39	9,380	66	1,058	890	2,499
Friday	11,472	--------	1,443	34	1,717	100	584	705	2,235
Saturday	8,966	10,840	--------	27	1,310	72	426	613	2,292
1922 Totals	125,085	58,354	10,980	225	18,798	449	3,663	4,118	12,427
1921 Totals	123,907	46,532	10,540	377	2,072	315	3,256	4,911	11,977
1922 Averages	--------	--------	--------	------	--------	------	611	687	2,072
1921 Averages	--------	--------	--------	------	--------	------	(1)543	(2)819	(3)1,663

Days	Official	Groom	Helpers	Press	Privilege	Season (paid)	Speed	Safety	Crop	Total by days
Monday	49	108	1,104	172	2,114	135	199	12	66	61,796
Tuesday	50	118	1,484	433	2,605	182	229	101	243	40,967
Wednesday	57	99	1,754	578	2,898	190	309	125	271	45,220
Thursday	56	111	1,833	909	3,955	196	348	331	276	66,980
Friday	46	98	1,644	502	2,625	156	305	139	222	24,027
Saturday	48	60	1,433	359	2,020	129	173	77	148	28,993
1922 Totals	306	594	9,252	2,953	16,217	988	1,563	785	1,226	267,983
1921 Totals	438	393	9,026	3,461	16,089	975	1,296	686	763	237,014
1922 Averages	51	99	1,542	493	2,703	------	261	131	205	44,664
1921 Averages	73	66	(4)1,505	577	(5)2,682	------	211	115	128	39,503

(1) Complimentary tickets were sent to members of the legislature, some state officials, officers of the city of Milwaukee including members of the common council, members of the board of supervisors of Milwaukee county, some West Allis officials, secretaries of state and Wisconsin fairs and representatives of the University and a few other colleges.

(2) Employees include men and women employed by the state fair—clerks, stenographers, Superintendent Sweeney's force, police, etc.

(3) and (4) Exhibitors' and helpers' tickets were issued to all exhibitors, whether competitive or commercial, including the automobile show, and engaged in the educational exhibit and demonstrations, and their helpers.

(5) Privilege tickets were issued to holders of concessions and their helpers. Although there were a greater number of concessions than in 1921, the average per day does not show as large an incrase as was expected.

It is suggested that beginning with 1923 all concessionaires and commercial exhibitors be required to purchase their own tickets. A statement can be issued to these patrons to the effect that the state fair has decided on this procedure instead of raising rates for space.

GATE AND GRAND STAND RECEIPTS

	Day	Night	Total
1922			
Gate	$64,092.20	$ 8,807.00	$72,899.20
Grand Stand	21,285.50	15,070.00	36,355.50
Total	$85,377.70	$23,877.00	$109,254.70
1921			
Gate	$60,078.20	$ 6,165.25	$66,243.45
Grand Stand	16,432.00	11,544.00	28,076.00
Total	$76,510.20	$17,809.25	$94,319.45
1920			
Gate	$100,809.75	$ 6,979.20	$107,788.95
Grand Stand	29,964.00	15,765.00	45,729.00
Total	$130,773.75	$22,744.20	$153,517.95
1919			
Gate	$66,808.55	$ 5,648.00	$72,456.55
Grand Stand	11,872.25	10,609.00	22,481.25
Total	$78,680.80	$16,257.00	$94,937.80
1918			
Gate	$48,726.70	$ 2,327.00	$50,936.70
Grand Stand	8,915.75	5,259.75	14,175.50
Total	$57,642.45	$ 7,586.75	$65,112.20
1917			
Gate	$50,883.45	$ 1,716.75	$52,600.20
Grand Stand	7,967.50	4,835.50	12,803.20
Total	$58,850.95	$ 6,552.25	$65,403.40
1916			
Gate	$48,532.60	$792.25	$49,324.85
Grand Stand	7,383.00	473.25	7,856.25
Total	$55,915.60	$1,265.50	$57,181.10

NUMBER OF EXHIBITORS BY DEPARTMENTS

Competitive	1922	1921	1920	1919	1918	1917	1916	1915
Horses	51	37	39	29	32	38	39	37
Cattle	221	236	232	153	80	43	61	59
Sheep	20	17	18	17	20	19	22	24
Swine	126	101	65	69	46	84	47	42
Poultry-Pigeons	(1)164	239	203	229	182	176	134	131
Agriculture	151	148	91	44	70	78	68	64
County Exhibits	23	22	20	24	26	27	27	26
Horticulture	89	78	56	53	60	52	52	51
Bees and Honey	32	30	20	10	7	9	9	8
Dairy	(2)	384	331	242	269	271	272	226
Boys and Girls	331	330	385	367	294	275	185	114
Women's Work	(2)	138	118	116	121	126	109	98
Education	1,004	948	1,239	504	915	860	953	910
Non-competitive								
Tractors, Farm Machinery	186	148	146	------	------	------	------	------
Dairy Machinery, Supplies	38	34	36	------	------	------	------	------
Automobiles, Trucks	194	136	128	------	------	------	------	------
Commercial	96	62	66	------	------	------	------	------
Totals	2,720	3,091	3,190	1,857	2,122	2,008	1,976	1,790

(1)Exhibits of pet stock and pigeons discontinued in 1922; only utility exhibits presented.

(2)Demonstrations successfully substituted for competition in 1922.

PREMIUMS PAID IN EIGHT YEARS

	1915	1916	1917	1918
Horses	$ 5,410.60	$ 6,218.60	$ 5,280.00	$ 5,749.75
Cattle	7,275.41	7,691.53	6,451.00	7,587.00
Sheep	3,093.00	3,488.00	3,844.00	3,637.00
Swine	3,515.25	3,985.50	3,844.75	4,029.51
Poultry	1,537.25	1,720.20	2,271.25	2,438.50
Agriculture(4)	879.50	1,361.50	1,432.00	(3)1,001.02
County Exhibits(4)	2,580.00	2,700.00	2,200.00	2,600.00
Horticulture	1,961.99	2,054.00	1,926.80	2,401.50
Bees and Honey	346.50	348.50	394.00	378.00
Dairy	2,775.28	2,284.62	2,265.50	2,261.33
Boys and Girls	929.00	1,339.40	1,378.26	1,351.75
Women's Work	929.00	851.75	886.00	925.50
Education	812.50	838.50	976.00	1,043.30
Speed(1)	15,821.00	15,026.00	(2)12,996.00	18,480.00
Miscellaneous	100.00	----------	----------	----------
	$47,378.20	$49,909.10	$46,146.06	$53,248.41

	1919	1920	1921	1922
Horses	$ 5,749.75	$ 9,154.00	$17,481.00	$17,905.00
Cattle	10,227.83	12,874.50	22,882.90	22,173.84
Sheep	3,789.00	3,456.00	5,719.00	6,153.50
Swine	5,028.37	7,909.00	8,586.75	9,151.50
Poultry	2,564.25	2,656.40	2,868.00	2,442.75
Agriculture(4)	992.50	2,046.00	6,584.00	6,059.00
County Exhibits(4)	2,400.00	1,900.00	----------	----------
Horticulture	2,412.75	2,685.96	2,991.18	3,685.26
Bees and Honey	270.00	840.00	924.00	997.00
Dairy	1,956.79	2,649.87	3,264.86	(6)
Boys and Girls	1,098.25	(5)2,749.50	2,478.25	2,407.00
Women's Work	837.00	976.50	945.00	(6)
Education	926.75	1,201.00	1,126.25	908.00
Speed(1)	20,140.00	21,634.00	19,618.00	21,666.68
Miscellaneous	----------	----------	----------	----------
	$55,393.25	$72,782.73	$95,469.19	$98,544.03

(1) Entry fees received in 1915, $5,216.20; in 1916, $5,135.50; in 1917, $6,317.50; in 1918, $7,827.50; in 1919, $8,377.80; in 1920, $6,183.20; in 1921, $5,200; in 1922, $5,579.00.

(2) Bad weather prevented one day's program.

(3) Culinary vegetables transferred to horticulture in 1918.

(4) Combined in the 1921 and 1922 total.

(5) Evident decrease is due to the fact that premiums have been reduced and more money spent for demonstrations.

(6) Competition discontinued in 1922 and demonstrations substituted.

Plans for Future Years

There will be some changes in 1923 in classifications in all competitive departments, these changes being made from year to year as experience suggests. Premium money will remain about the same as that offered in 1922, the Wisconsin State Fair having increased its money prize offerings until they equal those of other big fairs of America.

Continuing efforts to increase the educational advantages of the State Fair to the consumer, as well as the producer, all departments will be slightly reorganized to this end.

Ground gained in the dairy department in 1922 will be held, and effectiveness of the various exhibits in this department will be increased. It is expected that the U. S. Department of Agriculture will again cooperate with its usual up-to-date displays, and that the College of Agriculture and all dairy agencies in the Badger State again will cooperate to the end that the dairy department shall hold first place among State Fair dairy departments.

In live stock departments a stronger effort will be made to induce all breeding organizations to be represented during the period of the exposition, to spread information of the breeds they represent among patrons of the State Fair.

An effort will be made to increase education in proper feeding and care of live stock, and to enlarge the effect of cow testing.

It is aimed to add more features of value to the average consumer to the farm crops department.

Work of the women's department demonstration will be extended as room for this is available. If the grand stand is completed, this department probably will be moved to the second floor of the grand stand.

The educational department will be enlarged along the lines followed in 1922.

The tractor and machinery department will insist upon live exhibits whenever possible, along the lines of the 1922 Fordson exhibit.

Work of the farm boys' and girls' department will be devoted more largely to demonstrations, from which excellent results are obtained.

More educational features will be added to the horticultural department; for instance, there will be displays showing various uses that can be made of fruit as a factor in the family ration.

While whenever possible entertainment and racing features will be improved, efforts of the State Fair officials will be centered on improving the educational features of the State Fair, because after all it is the State Fair proper that makes the presentation of this great exposition worth while.

FINANCIAL STATEMENT

EXPENDITURES

	Actual Expenditures Fiscal Year 1920-21	Actual Expenditures Fiscal Year 1921-22
General Administration, Total	$77,774.70	$ 96,005.62
Administration Division, Total	11,090.56	11,787.89
Salary of Commissioner	5,000.00	5,000.00
Salary of office employes	1,860.59	3,778.17
Traveling expenses	601.66	953.61
Stationery and office supplies	200.09	185.29
Postage	118.40	385.92
Telephone and telegraph	145.39	232.84
Express, freight and drayage	6.50	3.21
Printing and publications	461.12	203.00
Miscellaneous supplies and expense	243.48	133.33
Publicity	400.00	361.40
Expense	2,053.33	....
Equipment	....	551.12
Agricultural Statistics, Total	$ 4,501.94	$ 6,141.40
Salary of director	1,000.00	1,000.00
Salary of employes	1,805.66	2,804.63
Traveling expenses	....	10.97
Stationery and office supplies	....	50.91
Postage	....	2.50
Telephone and telegraph	....	43.10
Express, freight and drayage	....	2.71
Printing and publications	1,169.30	1,984.23
Miscellaneous supplies and expense	526.98	142.10
Equipment	....	100.25
Insect and Plant Disease Control, Total	$10,567.18	$ 13,747.97
Salary of entomologist	3,000.00	3,000.00
Salary of office employees	1,458.17	1,548.88
Postage	1,329.60	1,310.00
Telephone and telegraph	218.16	231.02
Express, freight and drayage	572.34	758.69
Publications	1,188.75	1,443.32
Advertising	3,472.60	4,173.62
Photographs	368.24	532.56
Miscellaneous supplies and expense	151.79	781.95
Exhibits	2,959.21	1,881.44
Lectures	77.47	276.62
Equipment	....	310.50
Division of Live Stock Sanitation, Total	$ 8,095.36	$ 12,450.09
Salary of veterinarian	3,200.00	3,600.00
Salary of office employes	1,471.81	3,205.00
Traveling expenses	574.45	1,333.30
Stationery and office supplies	378.98	541.59
Postage	348.76	329.33
Telephone and telegraph	203.73	357.75
Express, freight and drayage	33.93	48.85
Printing and publications	1,028.50	870.52
Miscellaneous	113.16	901.36
Salary of veterinarians	97.20	377.50
Traveling and field expenses	637.41	652.47
Equipment	....	213.40
Live Stock Sanitary Board	7.43	19.02
Traveling expenses	....	....
Hog Cholera Control, Total	$ 3,964.27	$ 4,713.05
State Fair Division, Total	7,217.68	6,758.52
Weed Control, Total	$ 1,677.03	$ 2,679.15
Salary of director	....	712.50

FINANCIAL STATEMENT—Continued

	Actual Expenditures Fiscal Year 1920-21	Actual Expenditure Fiscal Year 1921-22
Salary of inspectors	1,494.18	3,045.79
Traveling expenses	3,339.50	4,449.47
Stationery and office supplies	186.08	100.69
Postage	183.76	299.94
Telephone and telegraph	84.62	123.39
Express, freight and drayage	18.52	30.36
Printing and publications	518.49	272.47
Books	183.44	69.37
Apparatus and chemicals	8.38	106.95
Sundry	92.04	238.67
Photos	....	21.02
Equipment	....	440.97
Apiary Inspection, Total	$ 4,999.04	$ 10,374.81
Immigration Division, Total	$25,661.64	$ 27,352.74
Salary of director	3,800.00	3,800.00
Salary of office employes	8,659.83	8,983.13
Traveling expenses	2,301.95	2,336.77
Stationery and office supplies	561.70	843.62
Postage	1,329.60	1,310.00
Telephone and telegraph	218.16	2 1.02
Express, freight and drayage	5 2.34	758.69
Publications	1,188.75	1,443.32
Advertising	3,472.60	4,1 3.62
Photographs	368.24	532.56
Misc. supplies and expense	151.79	781.95
Exhibits	2,159.21	1,881.44
Lectures	77.47	276.62
Revolving Advanced	....	....
Indemnities for Slaughtered Animals	$324,933.81	$ 339,236.85
Seed Inspection, Total	$ 8,493.54	$ 8,455.04
Salary of director	$ 2,375.00	$ 2,137.50
Salary of office employes	827.75	758.31
Salary of field and laboratory assistants	3,878.57	4,141.42
Travel and field expense	752.80	705.53
Stationery and office supplies	200.46	66.68
Postage	180.00	265.00
Telephone and telegraph	....	3.35
Express, freight and drayage	3.17	9.05
Printing and publications	189.35	109.80
Books	13.31	10.00
Chemicals and apparatus	43.82	....
Sundry	29.31	81.80
Equipment	....	166.60
REVOLVING APPROPRIATIONS, DISBURSEMENTS:		
Licensing veterinarians	$ 1,028.32	$ 657.96
Inspection of nurseries	17.89	439.50
Inspection of commercial fertilizers	1,563.74	1,709.34
Inspection of feed stuffs	5,897.54	9,857.98
Registration of stallions	1,874.50	1,171.13
Inspection tags	861.99	1,356.78
Inspection of agricultural limes	....	....
Dog licensing	2,557.93	5,926.00
White Pine Blister Rust, Total	3,670.01	3,820.96
Tubercular area testing, Total	21,562.82	35,552.00
Accredited herds, Total	14,803.95	22,993.91
Creamery herd testing, Total	12,891.46	....
Feeders	3,406.61	....
Manufacturing of tuberculin	....	2,499.75
STATE FAIR DIVISION OPERATING EXPENSE:		
Total	$275,763.97	$ 271,074.91
Administration	21,838.87	22,034.31

FINANCIAL STATEMENT—Continued.

	Actual Expenditures Fiscal Year 1920-21	Actual Expenditures Fiscal Year 1921-22
Care of buildings and grounds	42,379.63	22,800.28
County exhibits and farm crops	5,129.44	7,575.52
Boys and girls clubs	4,178.30	6,376.77
Dairy department	4,279.25	4,909.31
Educational department	1,793.47	1,685.45
Horticultural department	4,504.63	4,798.54
Cattle department	13,572.80	25,583.81
Horse department	11,339.27	20,076.21
Sheep department	4,193.74	6,158.50
Swine department	7,001.79	9,690.69
Poultry and pigeon department	4,066.02	4,172.27
Speed department	21,003.72	21,388.75
Auto and motorcycle races	200.96	293.22
Women's work	2,384.00	1,952.80
Bees and honey	1,127.08	1,317.45
Spelling contest	609.62	1,136.28
Admission department	4,481.36	3,900.60
Amusements department	32,240.01	35,247.96
Concession and private department	2,833.99	2,806.17
Machinery privilege	302.12	251.78
Publicity department	21,958.65	17,829.91
Public safety department	7,666.25	7,011.55
Womens' rest room and hospital	474.74	323.45
Transportation	165.06	146.68
Grand stand department	3,612.06	2,859.37
Women's land army	397.73	159.82
Markets and public health	....	....
Dining hall	2,574.38	1,937.11
Government exhibit expense	350.05	252.35
Agency	12,540.68	11,927.67
Percentage	36,564.30	24,469.93
STATE FAIR CAPITAL DISBURSEMENTS:		
Total	$ 24,368.57	$ 5,563.01
Sewage and sanitation	4.09	....
Tunnels and undertracks	....	118.10
Grand stand	105.88	24.55
Comfort stations	24,258.60	561.88
Equipment	....	4,858.48
MAINTENANCE:		
Total	$ 4,778.50	$ 25,025.57
RECEIPTS:		
Seed inspection	$ 656.37	$ 963.80
Veterinary examination	697.00	795.00
Nursery inspection	17.77	464.61
Commercial fertilisers	1,770.00	2,290.00
Feeding stuffs	6,425.00	10,703.24
Horse breeding	1,872.45	1,220.03
Inspection tags	1,286.02	1,217.49
Agricultural limes	160.00	110.00
Dog licenses	6,689.68	18,050.02
Miscellaneous	142.00	....
State Fair:		
Operation	176,568.53	126,685.01
Percentage	36,874.20	24,809.93
Agency	12,332.58	12,163.57
Totals	$245,491.60	$ 199,472.70

LIST OF PUBLICATIONS ISSUED BY THE WISCONSIN DEPARTMENT OF AGRICULTURE

1915-1922

Bulletins

1—November Crop Report	Nov. 15, 1915*
2—A Personal Work With the Homeseeker	
First edition	Jan., 1916*
Second edition	July, 1916*
3—Common Spray Materials and Other Insecticides	Mar., 1916*
4—Agricultural Statistics for Wisconsin, 1915	Jan., 1916*
5—Crop Report	May 15, 1916*
6—Crop Report	June 15 1916
7—Crop Report	July 15, 1916*
8—Crop Report	Aug. 15, 1916*
9—List of Licensed Veterinarians	Oct. 1 1916*
10—Biennial Report of Department of Agriculture	Dec., 1916
11—Agricultural Statistics for Wisconsin 1915–16	Jan. 1, 1917*
12—Official Seed Inspection in Wisconsin	Feb. 15, 1918
13—Feed Inspection for 1917	Feb. 15, 1918
14—Agricultural Statistics for 1917	Feb. 15, 1918*
15—Official Fertilizer Inspection for Wisconsin	May 1, 1918*
16—Distribution of Public Service Stallions in Wisconsin	Aug., 1918*
18—Feed Inspection for 1918	Dec., 1918*
19—Licensed Veterinarians	Dec., 1918*
20—Biennial Report of Department of Agriculture	Dec. 31, 1918
21—Agricultural Statistics for 1918	May, 1919
22—Fertilizer Inspection	May 1, 1919
23—Entomology Report	1919*
24—Licensed Stallions in Wisconsin	Sept., 1919
25—Feed Inspection for 1918	*
26—Wisconsin Weed Law	June, 1922
27—List of Wisconsin Nurseries, 1919	Dec., 1919*
28—Becker's Report, Agricultural Statistics—1919	1919
29—Wisconsin's New Dog and Stock Law	June, 1920*
30—Hog Cholera Questions and Answers	July, 1920
31—Distribution of Public Service Stallions in Wisconsin in 1920	Sept., 1920
31A—Activities and Service of the Wisconsin State Department of Agriculture	Sept., 1920
32—Feed Inspection for 1920	Oct., 1920
33—Biennial Report, State Department of Agriculture	Dec. 31, 1920
34—Wisconsin Agricultural Statistics for 1920	Dec., 1920*
35—Wisconsin's Revised Dog Law	Oct., 1921
36—Bulletin on Spraying (Entomology)	Mar., 1921*
37—Live Stock County Regulations	1921
38—Horse Breeding	Sept., 1921
39—Field Dodder (Seed and Weed Division)	July, 1921
40—Accredited Herd Work	July, 1922
41—Feed and Fertilizer Inspection	Nov., 1921
42—Nursery Inspection Law	Dec., 1921
43—Live Stock Shipped Into Wisconsin (Regulations)	Jan., 1922
44—Laws of the Department of Agriculture	Dec., 1921

46—Official Seed Inspection in Wisconsin..............Mar., 1922
47—Licensed Veterinarians..............................Jan., 1922
48—Agricultural Statistics.............................Dec., 1921
49—Distribution of Public Service Stallions in Wisconsin...................July, 1922
50—Biennial Report of the Department.................Dec., 1922
51—Feed Inspection for 1922...........................Oct., 1922

Circular

1—Nursery and Orchard Inspection Law...........Oct. 30, 1915*
2—How to Control the Cottony Maple Scale.........Apr. 20, 1916
3—Quarantine Notice—White Pine Blister Rust.....June 10, 1916*
4—Official Notice of Quarantine—Christmas Trees and Greenery from Parts of New England......Sept. 20, 1916*
5—List of Wisconsin Nurseries, 1916–17............Nov. 15, 1916*
6—Apple Grading and Packing......................Sept., 1917*
7—Veterinary Regulations..........................Oct., 1917*
8—Pasteurization Order............................Dec., 1917*
9—Wisconsin Weed Law..............................Mar., 1918
10—San Jose Scale and How to Control It..............Mar., 1918
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12—Notice of Modification of Quarantine (White Pine Blister Rust).................................Oct., 1918
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